FISHERIES AND BOTANY OF EASTERN INDIA

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INTRODUCTORY NOTE

By Surgeon-Major Francis Day,
Inspector-General of Fisheries in India.

A few prefatory words seem necessary in order to explain how I obtained access to the MSS. of Dr Francis Buchanan,[1] which have been so long withheld from the general reader.

Dr Buchanan, subsequent to his employment in examining Mysore and Malabar, was engaged from 1807 to 1813 in making a minute investigation into the history past and present, as well as the natural resources in all its branches, of the various Districts then under the government of Bengal.

His exhaustive work fills twenty-one large volumes of MS., besides seven more of tables of statistics, all of which have now been retransferred from the India House to Hindustān, and are at present in the charge of W.W. Hunter, Esq., LL.D., the Director-General of Statistics, who is engaged in utilising the materials they contain.

Irrespective of the twenty-eight volumes alluded to, there are others in the charge of the Asiatic Society of Bengal, but I shall only remark upon two, wherein are one hundred and forty-nine original coloured delineations of fish, and forty-five copies[2]. These drawings were made for the purpose of illustrating the observations in the Statistical Accounts.

Through the kindness of Dr King, of the Botanical Gardens in Calcutta, I became possessed of copies of the correspondance which passed between Dr Buchanan and his successor on the former leaving India for Europe.

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1. Dr Francis Buchanan subsequently assumed the surname of Hamilton. Cuvier, however, suggested that although he signed himself by his new name in his "Fishes of the Ganges," he should be recognised amongst scientific writers as "Dr Hamilton Buchanan," as under the latter name he was best known amongst naturalists. In the notes in the following pages, he is termed "Ham. Buch."

2. "On Hamilton Buchanan's original drawings of fish, in the library of the Asiatic Society of Bengal, by surgeon F. Day" Proc. Asiatic Soc. of Bengal, 1871, p. 195.

Dr Hare, July 27th, 1816, in a communication to the chief secretary to government, observes :—"In a letter from the Right. Hon. the Governor-General of the 5th January 1815, His Excellency says : "By a letter from Dr Buchanan received here, it appears that he proposes to carry to Europe all the drawings of animals and plants collected by him during the tour which he was employed to make in this country. Dr Buchanan states that it is his object to request the Court of Directors to accept this collection as a present from him. Now, I apprehend that those drawings are already the property of the Hon. Court, the service for which Dr Buchanan was employed and paid having specifically been the furnishing government with a knowledge of the animal and vegetable productions of this country, delineations are essentially included in this service."..... The drawings were transmitted to government with the following letter, dated 18th February :— "I have been honoured with your letter of the 31st ult., withdrawing the permission of the Hon. the Vice-President in Council for sending to the Hon. Court of Directors such drawings of natural productions as have been made at the public expense, and desiring me to deliver them to you, which I have accordingly done by the bearer... ..My object in requesting that I might be permitted to present the drawings to the Court of Directors, did not originate in a view of claiming the merit of making a present to the Company of its own property, but arose from a conviction that their being deposited in the collection at the India House, was the most probable means of rendering them useful to science."

Copies were made of these origonal drawings, consequently they "exist in triplicate, one copy being in the British Museum, where their free use is allowed."[1]

It is stated in the correspondence that Dr Buchanan sailed for Europe in 1815 in the "Marchioness of Ely," taking with

1. Dr Gunther, Zoological Record for 1869, p. 127.

him "collections of natural history,[1] coins and Hindu manuscripts," which he presented to the Court of Directors of the East India Company. In 1822 he published the "Fishes of the Ganges," which contained numerous illustrations from the Indian drawings.

In Chambers' "Lives of Scotchmen," it is remarked that Dr Buchanan, on his departure from India, was deprived by the Marquis of Hastings of all his extensive drawings and papers relating to every branch of natural history.[2]

However, although Dr Buchanan evidently complained that some papers had been refused him, it has never appeared that such related to the fish and fisheries, as no such charge appears in his "Fishes of the Ganges." Whilst Mr Montgomery Martin,[3] who was permitted to publish a book from Dr Buchanan's MS, alludes so very casually to the Fish and Fisheries that it is useless alike to the pisciculturist and ichthyologist.

Fortunately when Dr W.W. Hunter was last in Europe, his attention was directed to these manuscripts,[4] and he was permitted to bring them out to India for the purpose of utilising their contents.

The whole of these books having been brought to Simla, I was shown them by Dr Hunter, and was requested by him to

1. Enquiries at the India House have not resulted in the discovery of any Zoological specimens presented by Dr Buchanan to the Court of Directors of the East India Company. But in the "Catalogue of the Fishes of the British Museum," vol. III., p. iv., the receipt is acknowledged of "a collection of fishes from Bengal, believed to contain many typical specimens of Buchanan Hamilton's Work. Presented by G.R. Waterhouse, Esq." How these were obtained, and from whence they came, no information is given. The handwriting on the labels, in some at least, is very similar to that of the transcriber of Dr Buchanan's MS., and identical with that on the original drawings, which differs widely from that of Dr Buchanan himself, as shown in his personally kept "Journal."

2. M'Clelland, "Transactions of the Asiatic Society of Bengal," vol. xix.

3. "Historical and Statistical Account of Eastern Bengal."

4. Copies of some, at least, appear to be kept in the India Office library.

examine them for the purpose of ascertaining whether I could discover any allusion as to how the fresh water fisheries were worked at the commencement of the present century, as well as to how the MS. coloured figures of fish in Calcutta were referred to.

To my surprise, I found not only detailed accounts of the fisheries and how they were worked, rented, and protected, but also detailed lists of the fish of the different Districts, with their native names, &c.

Having obtained leave to moke public the whole of the papers relating to the "Fish and Fisheries", my next question was, how could this be best accomplished without altering or curtailing a single word from the original descriptions.

It appeared to me that the most useful plan would be to commence with a short account of the Fish and Fisheries[1] of the inland Districts, many of which are the same as reported upon by Dr Buchanan. Secondly, to print verbatim the original manuscripts respecting the fish and fisheries as observed between 1807 and 1813, to which I have added notes, mostly with reference to the name under which the same fish is to be looked for in the "Fishes of the Ganges." Lastly, I have given a short resumē of the innovations which have gradually crept in with respect to working these fisheries;—how, through want of supervision, the most deadly poaching practices are being freely carried on, to the impoverishment of these sources of food, and to the loss of the public in general, and the fishermen in particular.

1. See Report on the Freshwater Fish and Fisheries of India and Burmah, 1873.

THE FISH AND FISHERIES OF BENGAL

In the following pages will be found Dr Buchanan's description of the condition and modes of working the fresh-water fisheries in Bengal and contiguous Districts, between the years 1807 and 1813. For the sake of comparison, some extracts have been added from reports made in 1870-71 of the present state of these same pieces of water and the fertility of their piscine inhabitants.

Prior, however, to commencing these details, a brief description of the habits of the finny tribes which populate these fisheries may not be out of place. For whether the modes of preserving or using these pieces of water may have altered with time or not, the instincts of the indigenous fish must have continued unchanged.

It seems therefore necessary to explain how it is that many sorts of tropical fishes can travel across land; why they appear soon after the rains; how plains, which, from being dry for months, become large lakes, and populated by fish; and how some fish guard their offspring until they are of sufficient size to capture prey for themselves, and then drive them away to do so, or should they refuse to go, destroy them. Irrespective of this, one must observe that some fish are monogamous, others polygamous; some make nests for the reception of their eggs, others deposit them in the shallow water, in the sand, or amongst submerged grass or weeds.

The fishes which frequent the fresh waters in India are divisible into two distinct classes: (1) the *migratory*, and (2) the *non-migratory*, amongst the latter of which must be classed those species which only travel short distances, for the purpose of depositing their eggs in some suitable locality, or in order to obtain a better or more palatable form of food.

The *migratory fish* consist of two divisions: the marine, and the

strictly fresh-water ones. *Marine* fish enter fresh water either for predatory or breeding purposes. Thus the shad or *Hilsa* (*Clupea palasah*, Cuv. and Val.), like the salmon in Europe, swarms up the larger rivers at the commencement of the S.W. monsoon, as it is only in fresh water that their eggs can be brought to maturity. If these rivers are not barred by weirs, they continue their ascent for some hundreds of miles, lay their eggs in suitable spots, and then return to the ocean as lean and poor in condition as a salmon out of season.

But amongst many of the finest of the fresh water fishes, we see the same instinct exist. The rivers of the plains to them, are what the ocean is to the shad, and they ascend up the mountain torrents, and turning into the side streams, deposit their ova, having done which, they drop down to the waters of the plains as they find the size of the mountain river begins to decrease. Returning downwards, it appears now to be the rule to throw weirs across every river, at each likely place, and thus to capture the descending fish. But the means employed for their destruction, will be alluded to further on.

If the main rivers and streams, the highways of the migratory fish, are rendered so many places for the capture of those of every size, either ascending or descending, it might be erroneously concluded that no such destructive causes can affect the *non-migratory* fish. Here, however, it is necessary to observe, that although these latter fish are not destroyed in such large numbers in the weirs in the rivers, they have their own dangers to encounter. As the rains flood the country, they swarm into all side channels and minute streams, at which period their instinct teaches them to push on, and they do so in the most fearless manner. Then they can be easily knocked on the head with sticks, trapped as they are ascending, or should they have been so fortunate as to arrive at their breeding grounds, it is not difficult to place traps and fixed engines to take them and their young as they are endeavouring to return to the main streams or larger lakes.

To enable fish to pass up miniature streams which are liable to suddenly dry up, or be cut off, certain means would appear to be requisite to allow these creatures to safely overcome such circumstances. These we find they have been provided with, and such exist in the *modes of respiration* of some of these tropical genera. Consequently, before adverting to the subject of the sudden appear-

ance of fishes in Indian tanks after falls of rain, and their migrations during periods of floods, a few observations are necessary upon how they respire,* as some remarkable variations from the usual manner are observable, evidently to permit certain tropical species to resist causes which are not in existence in most extra-tropical regions. Three modes of respiration are perceptible: *first*, the usual one of oxygen obtained, except under peculiar circumstances, from air in solution in the water, which is separated at the gills; these may be termed for description, not definition, *water-breathers*, as the carps, *Cyprininæ*, or some of the siluroids, as *Macrones*, and they can live, as a rule, without rising to the surface. If any of these fishes are placed in a globe of water at a moderate temperature, with a diaphragm of net precluding their reaching the surface, their breathing remains unaffected. If, on the contrary, a bandage is stitched around the gill-opening, precluding their employing their gills, they rapidly become suffocated. This result in another form is perceived to occur in India, either artificially or naturally. Thus, when the water in which they reside becomes suddenly changed from clear to very muddy, their gills become choked, respiration is impeded, and death results. *Secondly*, some species which are, to a limited extent, "water-breathers," as already explained, are more essentially *air-breathers*, having a compound respiration, consequently muddy water hardly affects them. Such fish never obtain oxygen for any length of time from the air in solution in the surrounding water, but inspire it direct from the atmosphere, no matter how cool and charged with air that water may be, and if unable to obtain it direct, they become simply poisoned by the circulation of carbon. Amongst these fish are the "climbing perch" (*Anabas scandens*), the *Polyacanthus*, *Trichogaster* and "walking fishes" (*Ophiocephali*), all of which possess a cavity above the gills for the reception of air for respiratory purposes.

The difference between the respiration of these two divisions of breathers is very apparent in an aquarium. Thus the *Macrones carcio*, a "water-breather," keeps its gills constantly in motion; but in the "walking fish" they are scarcely moved, at intervals it rises to the surface, opens its mouth, expels a bubble of gas, and having taken what it requires, descends.

I instituted a considerable number of experiments (see Proc.,

* I omit the question of those species, as some of the loaches, which swallow air; or whether some genera do not absorb oxygen through the skin.

Zoological Society of London, May 14th, 1868, p. 274) to investigate this question. Some live specimens of *Ophiocephalus gachua* were placed in a globe, which was filled two-thirds full of fresh water. A diaphragm of fine net was then stretched tightly across the inside of this globe, one inch below the surface of the water, thus effectually preventing them from ascending to the surface to obtain a direct supply of atmospheric air; death invariably ensued in a longer or shorter time, generally in accordance with whether they remained quiet or continued excited. A bandage stitched tightly around the gill openings, whilst it prevented their being used for respiratory purposes, did not appear to cause any inconvenience so long as they could inhale atmospheric air direct, and this although it was not removed for twenty-four hours. But it must not be considered that these fish are entirely prevented from decarbonising their blood if they are unable to obtain atmospheric air direct, as, although some died within the first forty minutes, others lived seven, and one seventeen hours whilst below the diaphragm. In wet grass, at the end of three hours, those placed in it were found as lively as when first put there: one in a dry cloth lived for three hours and twenty-five minutes.

In Burmah, the fishermen appear to be practically acquainted with the fact of some fish, especially *Ophiocephalidæ*, being air-breathers; thus, after nearly all the water has been removed from the tank to be fished, leaving only about five feet of slimy mud, through which their bamboo net (*gyan*), has been drawn, they are aware that many fine fish still remain. A large cloth or mat is spread over the mud, and left there two or three days, on removing which, the fish are seen stupefied and easily taken, their blood having become carbonised from a deficiency of oxygen, due to want of air for breathing. These fishes die when deprived of access to atmospheric air, not from any deleterious properties in the water, but from being unable to decarbonise their blood solely from the water, aerial respiration being indispensable. It seems that they can live out of water in moisture for lengthened periods, and for only a short and variable time in water, provided they are unable to obtain air direct: and that the cavity above the gills does not contain water, but has a moist secreting surface, in which the air is retained for the purposes of respiration, whilst it seems probable that the air, after having been employed for this purpose, is ejected through the mouth.

Some of the venous blood appears in these fishes to be oxygenated

at the gills, and the remainder in the superbranchial cavity by means of air; but if they are kept under the water without being able to obtain direct access to it, this cavity, which is surrounded by bony tissue, becomes filled with water, which cannot be discharged owing to its almost non-contractile powers. Thus, there being no means of emptying it, and the contained water becoming carbonised, the whole of the respiration is thrown on the gills. This accounts for the reason that when an "air-breather" cannot reach the atmosphere, it lives longer in a quiescent state than in one of excitement, as there is not so much fuel being expended. This sluggishness, however, may be due to poisoned or carbonised blood.

In some scaleless or *siluroid* fishes there exists an accessory breathing apparatus, thus the *Clarias* possesses a dendritic one on the convex side of the second, third and fourth branchiæ, which has much the appearance of a bunch of red stick-coral; this is received into a cavity posterior to that existing solely for the gills. In the scorpion fish (*Saccobranchus*) a long air-vessel of a pulmonic character (in addition to the air-vessel proper which is enclosed in bone) extends throughout the length of the muscles of the back, and anteriorly opens into the gill cavity. We see the same provision made for the eel-like *Amphipnous*. In short, this direct aerial mode of respiration is a wise provision to enable fish to migrate through moist grass and muddy channels, wherein "water breathing" could not be effected.

A curious phenomenon in Indian fresh-waters, which indeed has never been satisfactorily explained, is the sudden appearance of healthy adult fish after a heavy fall of rain, in localities which for months previously had been dry. When pieces of water inhabited by fish yearly dry up, what becomes of them? On 18th January 1869, when examining this question, I was taken to a tank of perhaps an acre in extent, but which was then almost dry, having only about four inches of water in its centre, whilst its circumference was sufficiently exsiccated to walk upon. The soil was a thick and consistent bluish clay, from which, and not nearer than thirty paces to the water, five live fish were extracted from at least two feet below the surface of the mud. They consisted of two of the *Ophiocephalus punctatus*, and three of the *Rhynchobdella aculeata*. All were very lively, and not in the slightest degree torpid; they were covered over with a thick adherent slime. Amongst the specimens of fish in the Calcutta Museum is one of *Amphipnous cuchia*, which was dug up some feet below the surface of the mud, when sinking the founda-

tion for a bridge. If, when the water failed, fish invariably died, the tanks would be depopulated the succeeding year, unless a fresh supply was obtained from some other source, whilst the distance from other pieces of water at which they reappear excludes, in many instances, the possibility of migration, which must always to a certain extent be regulated by distance, time, and other local circumstances. Some species, especially "compound breathers," are able to live in liquid mud, which they cannot employ for the purposes of aquatic respiration. The practical question arises, whether, when food and water fail, some fish do not æstivate until the return of a more favourable season? Natives of India assert that they do thus become torpid in the mud. As the water in tanks becomes low, the fishes congregate together in holes and places in which some still remains, where they may be frequently seen in numbers, huddled together, with only sufficient water to cover their dorsal fins. If disturbed, they dive down into the thick mud, so that a net is often found ineffectual to take them. The plan employed to capture them is for the fisherman to leave the net in the water, and to walk about in the surrounding thick mud; in time they come to the surface to breathe, and fall an easy prey. As the water gradually evaporates, the fishes become more and more sluggish, and finally, there is every reason to believe that some at least bury themselves in the soft mud, and in a state of torpidity await the return of the yearly rains.

In Ceylon, Mr Whiting, the chief officer of the western Province, informed Sir Emerson Tennent that he had accidentally been twice present when the villagers had been engaged in digging up fish. The ground was firm and hard, and "as the men flung up lumps of it with a spade, they fell to pieces, disclosing fish from nine to twelve inches long, which were full-grown and healthy, and jumped on the bank when exposed to light." Many other animals which possess a higher vitality than fish, æstivate during the hot months, as *Batrachians*, the *Emys*, the *Lepidosiren annectens*, and some of the *Crocodiles*. Molluscs and land-snails are commonly found in this state during the hot and dry seasons.

The subject of the *migrations of fish* during the periods of rain is of great practical importance, it being mostly effected for the purpose of breeding, but in some few instances is due to predatory fishes being in pursuit of their weaker neighbours. At the commencement of the rains fish become very excited and disturbed; apparently unsatisfied with the localities they inhabit, they restlessly

seek a change to other pieces of water. This may be owing to the same instinct which causes the migration of marine fish to the fresh-water, or the necessity of obtaining a suitable place in which to deposit their ova. It is generally at this season that some have been observed travelling on land, and it has been imagined that places which are only occasionally covered by water become populated by fish after heavy showers of rain. The possession of the means necessary for locomotion on land, combined with those for direct aerial respiration, frequently leads to the almost sudden appearance of fish in unexpected places, and has given rise to numerous arguments and theories —amongst them, spontaneous generation, vivification of buried ova, migration, falling from the clouds, &c.

Amongst persons testifying to having witnessed the migrations of fish is Mr Morris, government agent at Trincomali, who in 1857 stated—"As the tanks dry up, the fish congregate in the little pools, till at last you find them by thousands in the moistest parts of the beds, rolling in the blue mud, which is at that time about the consistence of thick gruel. As the moisture further evaporates, the surface fish are left uncovered, and they crawl away in search of fresh pools. In one place I saw hundreds diverging in every direction from the tank they had just abandoned to a distance of fifty or sixty yards, and still travelling onwards. In going this distance, however, they must have used muscular exertion sufficient to have taken them half a mile on level ground, for at these places all the cattle and wild animals of the neighbourhood had lately come to drink, so that the surface was everywhere indented with foot-marks, in addition to the cracks in the surrounding baked mud, into which the fish tumbled in their progress. In those holes which were deep, and the sides perpendicular, they remained to die, and were carried off by kites and crows. My impression is that this migration takes place at night or before sunrise, for it was only early in the morning that I have seen them progressing, and I found those I brought away with me in chatties appeared quiet by day, but managed to get out of the chatties at night. Some escaped altogether, others were trodden on and killed."

The *Anabas scandens* is able to travel short distances on land, and has been seen by many Europeans whilst thus engaged. This migrating propensity of some of the fresh-water fishes of the East was no secret to the ancient Greeks, who frequently commented upon it, and although the truth of their statements was impugned

by the Romans, the accuracy of their facts is above dispute. But the migrations of fishes during the rains is, perhaps, that which is of most consequence in fisheries. In fields irrigated from rivers or tanks, breeding-fish swarm up all water-courses for the purpose of depositing their ova, and should be protected as much as possible. As regards the marine fish which ascend rivers, as the hilsa or shad the weirs which span rivers bar their upward ascent, and thus cut them off from their breeding-grounds.

Closely allied, in fact inseparably connected with their migration, is the question of the *breeding of fishes* * in the fresh waters, which may be treated of in the following order:—non-migratory and migratory fish of the plains; non-migratory and migratory ones of the hills. Apparently, the migratory species produce the largest number of eggs, probably as a compensation for the increased chances of their destruction. Thus, in a *migratory* herring, the shad, *Clupea palasah*, there were computed to be 1,023,645 eggs, and in a migratory barbel, 410,500 eggs, whilst carps in the hilly regions appear to have a larger proportion of ova than those in the plains. Amongst the *non-migratory* species, we likewise observe a difference: the *monogamous* not depositing so many as the *polygamous* as a general rule, which is probably due to two causes,—*first*, in some localities the former seem to breed more frequently; and *secondly*, they protect their offspring. Thus, a "monogamous" *Ophiocephalus* had only 4700 eggs, whilst a "polygamous" non-migratory carp, *Cirrhina reba*, had 41,500. Amongst the shoals of hilsa which I have seen, more female fish were captured than males.

Of the *non-migratory hill fishes* in the higher ranges, there are two situations in which they may breed:—the first is in water wholly or partially obtained from melted snows; the second is in tributaries or affluents of the main streams, as already adverted to. It appears as if it were not merely the fact of elevation and difficulty of ascent which prevents more fish residing in the hill streams, but because some influence is exerted by the melted snow water, deleterious at least to the ova, if not to the fry. In the upper ranges of the

* Whether fish, full of spawn, æstivate, and consequently are ready to deposit their ova as soon as the rains commence, is a question. Dr Buchanan, it will be observed, considered that the eggs themselves were deposited in the mud of tanks and hatched out at the next year's rains. Experiments of late years with ice have proved that the vivification of ova may be retarded.

Himálayas, personal enquiries lead me to believe that only the loaches, *Nemacheilus*, deposited and hatched their eggs in places where melted snow-water existed; however, no climate appears too hot or too cold for them. The mountain barbels, *Oreinus*, and all *non-migratory* fish, breed in small or large streams off the main snow-replenished ones, or even in rivers which contain snow-water in the winter months, as in those around Simla, provided such is not present during the breeding season. The parent fishes appear to ascend these side streams with the first monsoon floods, and having deposited their ova, to return to the main river as the amount of water diminishes, or their retreat to the rivers of the plains would be cut off. The eggs not hatching in sufficient time for the young to pass down in any quantities to the rivers, the later fry become detained in these side streams until the next floods. Thus, when examining these places just prior to the burst of the S.-W. monsoon, thousands were seen in every small rivulet, whilst probably due to food being scarce, they seem to grow slowly. Consequently for the first year they remain very small, until the monsoon rains enable them to descend to the larger rivers, when with the floods large quantities of food are washed down.

Of the *migratory hill fishes*, or those which ascend for breeding purposes, the various forms of large barbels, *Barbus*, termed mahásirs, furnish good examples. These fish do not breed in the main snow-fed rivers, but do so in the side streams of the Sub Himálayan range. On the slopes of the Nílgiris I have observed the same occur, but with this difference, that they can deposit their ova in the main streams there, because they are small and not replenished by melted snows. The mahásirs after breeding return to the main rivers, but the young are not generally sufficiently grown to descend to the plains. The foregoing appears to be the rule, to which, however, there are numerous exceptions; thus, if the mahásirs are very large, they may have to deposit their ova in rivers near the base of the hills, owing to their being unable to ascend higher; in these cases the young easily find their way into the main rivers of the plains. These fine fish having deposited their ova in the hill streams, and returned to the rivers of the plains, descend down their course in search of food, and if the upper portions of these rivers are not of much depth, their range is extended very far down; thus, I have seen numbers of mahásir netted in the Jamná below Dehli, whilst returning up river towards their breeding-

grounds. A shoal of mahásirs also descending rivers with weirs and irrigation canals, naturally turn into the latter, and having descended over one of the vertical falls, become unable to return to their breeding-grounds.

Of the *non-migratory fishes of the plains*, the *monogamous* and ubiquitous walking-fishes, OPHIOCEPHALIDÆ, are perhaps best known. As a rule, these fish do not deposit such a number of ova as the migratory forms, but they appear to breed oftener. Some of them reside in tanks, others prefer rivers, where they live in deserted holes they find in the banks. The tank varieties delight in lying in the grassy edges, where the water is only sufficiently deep to cover them, so that they have no difficulty in respiring atmospheric air direct. In Mysore, Colonel Puckle observed that the "striated walking-fish" (*Ophiocephalus striatus*) breeds twice a year, in June and December; the male constructing a nest with his tail amongst the vegetation, and biting off the ends of the weeds that grow in the water. Here the ova are deposited, the male keeping guard, but should he be killed or captured, the vacant post is filled by his partner. When the fry are hatched out, they are defended by their parents with great courage. They may generally be perceived swimming just below the surface of the water a little above their progenitors. As they increase in size they are usually driven away by their parents, or are said to be even eaten by them if they do not disperse and search for subsistence for themselves. Some of the gobies, *Gobius*, are probably monogamous, as they construct regular nests for the reception of their young. The *polygamous* non-migratory fishes of the plains are very numerous, but by "non-migratory" must be understood that they do not migrate long distances for breeding purposes. The smaller carps are innumerable in places, as are also the siluroid mágurs, *Clarias magur*, and the scorpion fishes, *Saccobranchus fossilis*. All these sorts during the rains pass up small water-courses or channels in order to deposit their eggs in irrigated fields, flooded plains, temporary formed tanks, or along the grassy sides of rivers.

The *migratory fresh water fishes* of the plains, which do not apparently, as a rule, ascend to the rivers of the hills to breed during the freshes, are generally larger and stronger than the non-migratory. Amongst them there do not appear to be any of the spiny-rayed or *Acanthopterygian* order. Amongst the carps, *Cyprinidæ*, a considerable number are affected by the

monsoons, and at periods of inundation migrate for the purpose of breeding.

The *migratory sea fishes*, as already remarked, are divisible into those which ascend rivers in order to find a locality suitable for depositing their eggs; and the predatory sorts that also enter rivers, but solely to prey upon their weaker neighbours. Of those which ascend for breeding, is a *Sciœna*, the *S. coitor*, some mullets, as *Mugil corsula*, and more especially the hilsa or shad, *Clupea palasah*, already remarked upon as ascending the larger Indian and Burmese rivers during monsoon months for the purpose of breeding. At these times there is too much water below such weirs as those spanning the rivers in Madras or Orissa for this purpose, whilst, should they deposit their ova in shallows below them, they will be left high and dry as the floods subside, and their fertility be destroyed: the same destruction to their fertility would follow their being deposited in the deep and rapid parts of the rivers. More than one official has questioned the accuracy of this, and given the opinion of native fishermen that the ova is deposited in the river water, and whilst being carried out to sea becomes vivified; therefore, weirs cannot injuriously affect the annual supply of the hilsa fishes in the rivers. The lower Kalerun (Coleroon) weir, which was built in 1836, spans the river about 15½ miles below the town of Combaconum; its perpendicular height 8·3 feet, and its width at its base 8 feet. It possesses narrow under sluices, up which these fishes cannot ascend, whilst the rapidity of the current or other cause precludes them from passing over it. Formerly the shad extended as high as Trichinnápalli in quantities, and were even taken miles above that town; the fishing, according to the Collector, prior to the construction of this weir, extended over 80 or 100 miles of the river, instead of its being concentrated, as it were, on a single spot. The fishing decreased until a breach occurred, when it almost ceased locally, owing to the fish being able to obtain access to their breeding-grounds, not being stopped by the weir, and they were taken even above Trichinnápalli. It decreased, doubtless, due to the fish being unable to breed; the year after this breach, when it had been repaired, a great increase was observed in the fish, evidently due to one season's breeding. Depositing their eggs fruitlessly below these constructions, when between the sea and their spawning beds, and unable to pass them, extermination in such rivers will only be a question of time, should no remedial measures be adopted. This fish never breeds in tanks or canals.

As to the immature *fry of fish*,—where they are found, their means of subsistence, and opportunities of growth, are questions which it is very material to offer a few remarks upon. The fry of fishes are protected from their voracious parents in hill streams and rivers, by those localities being generally unequal to the supply of food for the mature or large fish, which migrate up these water courses in order to deposit their ova: consequently, they drop down again into the rivers of the plains as the waters begin to subside, leaving the fry to descend with the next year's rains. These fry, however, appear to likewise continue their descent in a very quiet and gradual manner, for when they have an opportunity of going down-stream, they avail themselves of it. In the Himálayas, numbers of these young fish descend into the *kuls* or canals for turning mills, where all are captured. Those which reach pools in these streams appear to often continue there throughout the dry months, unless destroyed, until the monsoon recommences. In the low country it is in irrigated or flooded localities that the fry most abound, and generally with the monsoon rains every little stream and piece of water is resorted to by them to obtain food in. But by irrigated fields are not here included those irrigated by wells, but merely those in communication with running water and large tanks. In a large extent of irrigated country, the fields, which are divided off into embanked spaces in order to disseminate the water obtained from an irrigation canal, or embanked river or stream, the fry obtain an entrance along with the water which is kept at a depth which suits their puny size; whilst insect life abounds, excepting birds, they have few natural enemies but man to contend with. If irrigation is carried on by dipping water out of canals at some depth, and this does not run off again into any other water-course, the fry of course must perish as the water dries up. But if the water is conducted from field to field, these localities should be excellent nurseries for young fish, but, as has been observed, they are now, as a rule, more useful in destruction than in propagation, as man is allowed to place traps at every outlet (and sometimes at inlets), and destroy all the young fish as they drop downwards towards the larger river. Fry also are found in abundance in sheltered spots at the edges of rivers and in shallow pieces of water, where there is no current to wash them away, and here an abundance of suitable food exists, but where, as will be shown, they do not escape the search of the fisherman and man's destructive greed.

Before enquiring into whether a wasteful destruction of fish takes place in India, it will be as well to observe upon *what proportion of people in India and Burmah use fish as food, or rather can do so without infringing caste prejudices.* Amongst the various races inhabiting India and British Burmah, this article, as food, is held in different degrees of estimation, and in proportion to such must be its economic importance. In the Panjáb, comparatively but few of the inhabitants are prohibited by their religion from consuming fish, but there are many Hindus who reject it, as well as the rural population of some Districts. But of those residing in towns and in hilly ranges, it appears that, if the Bráhmans are excepted, the consumption of fish is only limited by the paucity of the supply and the cost of the article. The price where fish is sold is stated, respecting the better sorts, to bear the same proportion to that of the best mutton, as the inferior does to that of inferior mutton, and varies from one-third that of mutton to an equal price with it. In Sind, fish is generally eaten by the population of the Province, whether Musalmán or Hindu, except the Bráhmans. In the North Western Provinces, containing 30¾ millions of population, out of 20 returns received from native officials, 17 give more than half of the people as not forbidden by religious scruples to eat fish. In Oudh, the majority of the people appear to eat fish, which seems to be more of a necessity than a luxury, whilst a larger number would consume it were the supply equal to the demand. In the Bombay Presidency, the returns appear to show conclusively that the majority of the inhabitants of the inland Districts are consumers of fish when they can procure it. In the Assigned Districts of Haidarábád, fish, as food, is esteemed by a very large proportion of the residents. In Mysore and Curg, at least half the people are fish-eaters when they are able to obtain this species of food. In the Madras Presidency great numbers are fish eaters, the largest exceptions being Bráhmans, goldsmiths, high-caste Súdras, the followers of Siva, Jains, &c. The Collector of South Canara gives the proportion of fish-eaters at 89 per cent.; advancing southwards into Malabar, this proportion appears to decrease. In Tanjor and further towards Madras, exceptions to this strict carrying into effect of the rule of not consuming that which possessed animal life begins to be observed, but in many parts of the Presidency salt-fish appears to be preferred to the fresh, more especially by the lower castes. In Orissa, all but the Bráhmans and some religious fanatics seem to eat it, but not in

its salted state. In Bengal Proper, from 90 to 95 per cent., and in Assam and Chittagong, almost the entire population. In Burmah, the population, as Buddhists, profess a religious horror at taking the lives of the lower animals; but being universally fond of a fish diet, they judiciously condemn the fishermen to eternal perdition, whilst they consume their fish in the form of *nga-pee*. Without entering more fully into this subject, it may be fairly advanced that fish is more suitable as a general food to the natives of the Indian Empire than the flesh of village sheep, pigs, and fowls, whilst the majority of the people eat it when they can procure it

Where no regulations exist as to the method in which fisheries should be worked, and should other circumstances be equal, that country or District which is most populated by man will be the most denuded of fish. Individuals would sooner live by fishing than by agriculture, as the trouble of capturing the finny tribes is less than tilling the soil, being simply catching without any idea of preservation. Naturally, fish have been endowed with certain means of increase, and protection, such as producing an enormous number of eggs or frequent breeding, or even by the action of periodic floods, when small-meshed nets cannot be used in rapid streams,* and by swamps covering a large extent of country, where shelter is afforded by grass, rushes, &c., rendering vain man's attempt to depopulate. But, as inhabitants augment, watery wastes become drained and cultivated, predatory man increases his methods of destruction, and then a decrease of food becomes apparent. As the price of food rises, so that of fish increases, and if the fish-eating population yearly becomes larger, increased exertions are used to capture fish to meet their demands: the size of the mesh is decreased, weirs are augmented, and everything taken, no matter how small, as fishermen never appear to consider from whence the next year's supply is to come, but only the easiest method to take at the present time all they are able.

* This amount of protection does not extend to any great extent to the fry of fishes, as they would be washed away by a rapid current, consequently they seek the shallows.

FISHERIES OF DINAJPUR DISTRICT.

FISH forming by far the greater part of the animal food that is consumed in the District, the fisheries deserve particular notice. The demand being very considerable, and the supply being rather scanty, there is none exported, and salt is too expensive to admit of its being used in curing fish. The whole fish caught are therefore consumed in the country, and none are exported. During four months of the year, when the rivers are much swollen, fish is very scarce, for the animals have then such an extensive range, that they are not easily caught; but, as the inundations subside, and when the fish are confined within narrow bounds, they are easily secured by various simple means which the natives employ, and a very large portion of those taken are secured when they may be said to be almost left sticking in the mud, by means that in most countries would be quite ineffectual.

The most simple method, when a pond, ditch, or marsh has become nearly dry, and the fish of a large space have been collected into a small pool, is to divide it by dams of mud, and then, having thrown the water from each successively, to catch the fish as they are left dry. This is usually practised by all the poor labourers, especially in the ditches and pools near the rice fields, which are not let to fishermen by the landowners.

It must be observed, that in about six weeks after the rainy season commences, every rice field, although quite dry and hard in spring, abounds with small fishes. They are certainly most numerous near rivers and marshes, from which they in general come; but I am inclined to think, as I observed in Mysore, that the eggs often continue dry in the fields, and are hatched after they have been moistened by the rain. The natives account for their appearance in such places by supposing that they fall from heaven with the rain. The clerk (Muharrir) of the division Rájárámpur, assured me, that

he had often seen them leaping among the grass as the shower fell In fact, a person who is well disposed, can see anything; like a very good Danish naturalist, who imagined that he saw a fish gravely walking up a tree, for he had been assured by the natives that such was the common practice.

Where the water is deeper, and communicates with a large extent of low land, this method is improved by enclosing a square piece of shallow water, perhaps fifteen feet in diameter, with a mound o earth, and leaving an opening of about three feet wide in the side next the deepest water. The space within the dam is then filled with branches of trees, which attract the fish. After the branches have remained for some days, the opening is shut with a dam, the branches and water are thrown out, and the fish are secured. This also is chiefly practised by those who are not regular fishermen; but when this plan is farther improved, it becomes one of the most effectual means of procuring fish that are employed in this District.

In the old courses of rivers, called Bils, or in the courses of such as have little current, a large quantity of branches and twigs of trees are tied together and thrown into the water, so as to occupy a space of twenty or thirty feet square, from the bottom to the surface. After they have remained from ten to thirty days, and the fish have entered into all parts, the branches are surrounded by a kind of screen called Byáná, which is made of reeds (Ikiri) tied parallel to each other by means of twisted grass (Kese), and placed so close that the smallest fish cannot escape. These screens are about four feet wide, and of sufficient length to surround the whole heap of bushes. When this has been done, the bushes are thrown out, and the fish are secured by small bag nets (Chakoni), the mouths of which are fastened to hoops.

The Byáná or screen is sometimes used without having previously thrown in branches of trees. This is done in shallow water, where there are many weeds. A space is surrounded by the Byáná, and all the fishermen go in with bag nets and secure the fish.

This kind of fishing requires about seven men, who usually have two heaps of branches in the water for nine months in the year, or from about the middle of October until the middle of July, when the country becomes too much inundated. They draw one of these Byánás once a week, and in the intervals of this labour, surround small spaces, as above mentioned, where no branches have been placed.

These same fishermen employ a kind of trap called Ontá, which is made in the form of a truncated cone, four feet high, and from eighteen to twenty-four inches at the bottom. These traps are made of reeds, in the same manner as the screen, and the two edges are not fastened together, but are bent in towards the cavity, so as gradually to approach each other. The fish can readily force its way into the cavity, but its efforts to come out are vain. The fish are directed to the opening by a screen placed on each of its sides, and, according to the situation of the fishery, these are disposed in two manners.

The one is used during the dry season in shallow water-courses that are stagnant or have but little stream, and in such situations the screen extends the whole way across, and has traps at the distance of every twenty or thirty feet. In the one at Akhánagar, which was about 300 feet wide, a net was suspended over the screen, in order to prevent the fish from leaping over, for some of the carp kind leap with an agility equal almost to that of the salmon. This apparatus, called a Bándh, procures a great many small fish, and is usually rented for a certain sum.

The other situation chosen for this manner of fishing is much more common, as during the rainy season it is the only way in which these fishermen can procure employment. The screen is placed on the shelving side of a river, with one end to the shore, and the other as far into the water as possible, but it cannot be placed where there is a greater depth of water than four feet. Such a screen admits of one or two traps, according as the water deepens more or less suddenly, and one man manages two screens. The fish caught in this manner are much smaller than by the other method, but the quantity makes up for this defect. These fishings with the Byáná and Ontá are very productive, especially in the southern and western parts of the District, and require no boats.

Still more simple traps are used. One called Polo and Tarpá is a basket with a hole in the bottom. In shallow water the fisher puts the mouth in the mud, and then passing his arm through the hole in the bottom, gropes for the fish which he may have secured. Another, called Jákoyi, is a basket of an irregular three-sided form, open at one end, and has a bamboo shaft The fisher places the bottom flat on the mud, treads among the weeds before the opening, thus drives the fish into the trap, and then, suddenly raising the

handle, brings the opening above the surface. These two methods can only be practised in very muddy places covered with aquatic plants, and are commonly employed by labourers of the lowest rank to catch fish for their own use.

The most simple net in this country is the Besál, which is stretched between two bamboos that meet behind at an acute angle (about 75°), by which the fisherman holds. The net is of a triangular form, so as to apply to the bamboos, but is much bagged behind. The fisherman, walking up to the middle in the water, pushes the points of the bamboos along the bottom for a little way, and then raises them up to secure whatever fish may have come into his net. The bamboos are from twelve to fifteen feet in length.

The same form of net is enlarged so as to have bamboos nineteen cubits long, and is then used in a boat. A rower at each end manages the canoe, which is kept broadside on to the stream, and allowed to descend with it, and a third man lowers the points of the bamboos, which are fixed at right angles to the gunwale, and then occasionally raises them to secure the fish. This is one of the most common nets used by fishermen. Its mesh is small. The boat is 16 or 17 cubits long by $2\frac{3}{4}$ wide, sharp at each end, and broadest abaft the middle. At the widest part of the boat two forked sticks project between three and four feet outwards and upwards from the gunwale, and a stick lashed between the forks serves as a lever, over which the bamboos of the net are raised and lowered. On the gunwale opposite to the net is a small outrigger, which serves as a balance. This kind of fishing may be carried on at all times, but the rainy season is the most favourable. Most of the fish caught in this manner are of the crustaceous kind. On the Mahánandá, a boat built of Sál will cost twenty rupees, and will last fifteen years, but it requires considerable repairs. The net is usually made of son, but sometimes of cotton, and, were it sold, would be worth ten rupees, but the fishermen usually make it themselves, and it costs only the materials.

The same kind of net is still more enlarged, and is raised by a complicated machinery of bamboos. It is called a Chaurí or Khorá, and is fixed on the steep side of some river. A frame of four strong bamboos supports the net, placed with its descending edge towards the mouth of the river, and also supports two sloping bamboos, on which a man walks, who has one end of a long rope round his

middle. The other end passes over a bamboo, for they have no pulley, and raises the net when the man walks down, and lowers it into the water when he walks up the sloping bamboos. The moving power is increased by a lever of bamboo, the heel of which rests on the bank, while the rope from the man's waist is fastened to the other end, and that again is connected with the bamboos of the net. This is the most complicated machine that I have seen the natives employ, and seems to me very ill contrived. The net is quadrangular. Two corners are stretched to the bamboos, one of the other two corners is fixed to the bamboo lever, while the other is fixed to the end of a bamboo that projects over the river, which is fastened to where the lever and the two lateral bamboos join, and which is suspended by a rope from the frame, so that this corner should always be high. Ropes also pass from the bank to the two lateral bamboos, which prevents them from yielding to the stream, while a small bamboo from one of the lateral ones stretches out the lower edge of the net. Two men are employed at this net, one below, who is generally the proprietor, and who takes out the fish, the other walks backward and forward on the inclined bamboos, and is usually hired, getting 6-16ths of the fish. These are generally small, and most are caught from about the middle of September until the middle of November, when the rivers are falling.

Another kind of net, somewhat of a similar nature, would appear to be better fitted for such a large machine. It is called Chak or Jhăti, and is of a square form, a good deal bagged in the centre. Its angles are fastened to the ends of two bamboo bows that cross each other at right angles in the centre, which is suspended from the end of a bamboo lever, the other end of which rests against the bank, where the fisher sits. He lowers and raises his net by means of a rope that is fastened to the far end of the lever. A large net of this kind, raised and lowered by a man on an inclined plane, with the assistance of a pulley, might be a good contrivance in muddy water. The Chak is used chiefly by poor farmers and labourers.

The casting net is very much used. One from nine to eleven cubits in diameter, and called Bhomori and Khepla, is commonly thrown from the shore or from a boat. The mesh is small, and the sinkers are often merely earthen rings baked by the potters, but iron rings are also used for the purpose. If made of cotton, the net will last seven years; if made of son it will last only four, and will cost

from eight to ten rupees. If the net is thrown from a boat, two men are required for this fishery, one to throw the net and another to manage the boat. This latter and the boat are usually hired by the man who fishes with the net, and who allows the boatman 6-16ths of the fish that are caught. The boat is only 13 or 14 cubits long and 2½ broad, and costs on the Mahánandá about 14 rupees. Small fish, especially of the crustaceous kind, are chiefly caught in this manner, which is only used in the dry season.

A much larger kind, 38 cubits in diameter and called Othar, is frequently employed, and is thrown by means of a long narrow boat, which must be rather longer than the diameter of the net. This is gathered carefully into the boat, one edge being taken in first, and then one fold is placed above another. The boat is rowed into the stream, and by a rower at each end is placed broadside on. Two other men then throw over first one edge of the net, and as the boat drives, they throw gradually the remainder. The whole sinks to the bottom, and the boat is allowed to drive until the edges of the net have been dragged close to each other, when the net is drawn to the shore. Very large fish are caught in this manner.

The natives use the seine, of several sizes, and different names.

The Pahiljál of Ghorághát is a seine composed of several pieces, about 11 cubits wide by 12 cubits long, which belong to different fisherman, six or seven of whom unite their stocks, and join their different pieces into one net. The centre pieces are the widest, the mesh is small, the floats are gourds, and the weights are rings of potters' ware. It is thrown out in the usual manner from the stern of a boat, and requires six or eight men to draw it. The fish are divided equally, the owner of the boat taking half a share more than the others.

At Pátnítalá, on the Atrái, the large seine is called bed, and is made in one piece, 60 fathoms long and 10 or 11 cubits wide in the centre. It is floated by the spongy stems of the solá (*Aschynomene diffusa*, W.), and sunk partly by iron rings, and partly by those made of baked clay. The twine made of son would cost ten rupees; but the plant is usually reared by the men, and spun by the women in intervals of labour, so that no estimate can be formed of its value. The boat is made of mangoe-wood, costs about three rupees, but lasts only two years. Six men are required; the proprietor of the net and boat takes 6-16ths of the fish, the remainder is divided equally among the other five men: so that a capital of

less than sixteen rupees is reckoned adequate to the labour of two men for the rainy season, at which time only this net is used in the river. At all seasons it is used in tanks. The largest fish are caught by it, such as Rohit or Rui, Kátal, and Chital.

The Táná is a smaller seine of fine twine, about 90 cubits long and 3 cubits wide. It is floated by cuttings of a spongy reed called Ulu Khágrá, and sunk by rings of potters' ware. One man goes with the boat, and another holds the end that is left on shore. I should have supposed that the man in the boat had most trouble, but his situation is considered as preferable. This net seems well fitted for clear water, a shallow river, and sandy bottom. Two or three nets of this kind are sometimes joined into one.

The Tune is a small drag net that is well fitted for fishing in shallow water among weeds. It is about 20 cubits long and $5\frac{1}{2}$ cubits wide, and has neither floats nor sinkers. A row of sticks, about 2 feet long and 2 feet from each other, unite the two side ropes, so that the net bags behind. A man at each end goes into the water, until both are about 3 feet deep; they then immerse the net, and drag it towards the shore with one end of the sticks touching the ground.

In the Mahánandá, which is frequented in the rainy season by the fish called Ilish, or hilsa, four other kinds of nets are used. They are called Khurkí, Sangulá, Konayu, and Ber; but as I was there at another season, I had no opportunity of seeing them, and cannot describe them from the accounts of the natives. This fishery lasts from about the middle of June until the middle of October, and two very fine kinds of Cyprinus, the Rohit or Rui and Kátal, are frequently caught in the same nets.

Wherever the fishery is of such importance as to employ regular fishermen, the landlord exacts a revenue, which seems judicious and proper, because the proprietors are interested to improve the fishery, and to take care of the people employed; for I am persuaded that a common property is in general neglected, and turns out of little or no advantage either to the public or to individuals. In this District the property in the fisheries (Jalkar) has in many places been separated from that of the adjacent land, which seems to me to be a great loss, as it is the proprietor of the neighbouring land alone that can take care either of the fish or fishermen. Yet probably some specious reason was held out for the separation, which, I am told,

was made when the Rájá's estates were sold for arrears of revenue, and the sales were, of course, conducted by the Collector. I heard, however, no reason assigned for such a separation, and must confess that I know of nothing rational which can be alleged in its defence. Even the fish in ponds do not always belong to the proprietor of the banks, who, of course, will never take care to stock them, and who is the only person that can prevent poaching, so that probably not one-fourth of the fish is produced for use that might be by proper care. The same may be said of Bils or water-courses.

The duties that are levied on the fishermen are in general moderate enough, and do not amount to a considerable sum. The largest proprietor of whom I heard (Balarám Joti) receives only 2000 rupees a year, and I believe that part of this arises from some duties which he levies on ferries. The proprietors generally let their fisheries from year to year, and the farmers (Ijárádárs) sometimes employ fishermen to catch the fish, either for wages or for a share; and sometimes levy so much money for each man or boat employed. Thus a water-course (Bil) in the Máldah District pays to the proprietor 130 rupees a year. The farmer employs fourteen men to fish with the Byáná, and these give him one-half of the fish. They fish for nine months in the year, and each can make about four rupees a month, out of which, however, they have to deduct all expenses; but these are inconsiderable, as they require no boat, and make the whole apparatus. The farmer therefore receives about 500 rupees, out of which is only to be deducted the rent, and the charge of watching to prevent imposition. Small traders come and purchase the fish, which they retail at different markets.

These fishermen, when they fish with the trap (Ontá), pay two rupees a head for the season of three months. Their profit is then still greater, and they have a remarkably good market in the manufacturing towns. Those who fish on the Mahánandá pay twelve ánás a head yearly for the dry season, and the same sum, with four rupees for each boat that is wrought by five men, if they are employed in the Ilish fishery. In this case, the more wealthy men furnish the boats and nets, and take one half of the fish, while each man pays his share of the duty. The profits of those who fish with nets and boats, is more considerable than of those who use the screen and the traps.

Near Máldah, the traders who retail fish have some capital; in other parts they are in general very poor, and the fish are often retailed by the wives of those who catch them.

The rent in most other parts is lower, and the fishermen poorer than near Máldah. At Ghorághát, for instance, on a noble river, each fisherman pays five ánás a-year, and fishes in whatever manner he pleases. His monthly gains are reckoned from two or three rupees. On the Atreye (Atrái) at Pátnitalá each fisherman pays six ánás a year; but then, except from the chief men, ten ánás more are said to be exacted as presents, making the whole duty one rupee a head, and they may fish in whatever manner they please. At Patirám, each fisherman pays one and a-half rupees a-year. Fishermen in general are not so poor as the common labourers who are employed in agriculture, and many of them live like farmers who have two ploughs. The whole number in the District may be about 2,500 houses.

The following table, showing the present population of the District, and the total fishing population, &c., is taken from the Census Report of 1872:—

District.	Total population.	Total adult males.	Percentage of adult males to the whole population.	Total fishing population.	Number of Fishermen.	Number of Fish-mongers.			Number of Net makers.
						Males.	Females	Total	
Dinájpur	1,501,924	482,736	32·1	31,206	4164	...	111	111	18

VARIETIES OF FISH—

1. *Tenpá*,[1] *Tetrodon*, a bad small fish, reckoned impure by the Bráhmans.
2. *Vám*, Macrognathe armé.[2]
3. *Gongti*, Macrognathe aguillonné.[3]
4. *Gánger Gongti*, Macrognathe.[4]

Good fish, resembling eels in taste.

5. *Báliyá*, Gobie eleotre?[5] a small but good fish.
6. *Khalishá*, Trichopode,[6] a beautiful small fish.

[1] *Tetrodon fluviatilis*, Ham. Buch. Fishes of Ganges, p. 6, pl. 30, f. 1.
[2] *Macrognathus armatus*, Lacép., Fishes of Ganges, p. 28.
[3] *Macrognathus aculeatus*, Lacép., Fishes of Ganges, p. 29.
[4] *Macrognathus pancalus*, Ham. Buch. Fishes of Ganges, p. 30, pl. 17, f. 7.
[5] *Gobius giuris*, Ham. Buch., Fishes of Ganges, p. 51, pl. 33, f. 15.
[6] *Trichopodus colisa*, Ham. Buch. Fishes of Ganges, p. 117, pl. 15, f. 40.

7. *Gajál*,[1] Opheocephale.
8. { *Garayi* / *Bharayi* } Opheocephale karawey.[2]
9. *Cheng*, Opheocephale.[3]

} Much used by the natives, but very indifferent eating. The last being extremely tenacious of life,

is often found wriggling from one pool to another, when there has been a heavy rain. It is one of the kinds which are supposed to fall from heaven with showers of rain.

10. *Kai*, Lutjan grimpeur.[4] This is a fish very much esteemed by the natives, and one of those supposed to fall from heaven. They also have a fable of its being able to climb a cocoa-nut tree. It is with the utmost astonishment that I perceive M. Lacepéde carried into this error by a foolish account, published in the Linnæan transactions. I should rather have classed this fish with the Holocentres, and M. Lacepéde has probably taken his account entirely from the beforementioned source. This animal is remarkably tenacious of life, and I know can live a whole day without water. It is very well tasted, but full of bones, and is reckoned a restorative.

11. *Chándá*, Centropome.
12. *Rángá chánda*. Centropome.[5]
13. *Nam chándá*, Centropome.[6]

} These fish are very common, but are too small for being dressed in the European manner.

14. *Bhedá*,[7] Holocentre. This fish has a strong resemblance to the Kai in its external appearance, tenacity of life, and dietetic qualities.

15. *Pangiyá*, Cobite.[8] A small fish little esteemed.

16. *Mágur*, Macropteronote grenouiller,[9] an ugly fish, but very much esteemed by the natives, who consider it as very strengthening. I think it is far from being pleasant to the taste.

[1] *Ophiocephalus marulius*, Ham. Buch. Fishes of Ganges, p. 65, pl. 22. f. 19.

[2] *Ophiocephalus lata*, Ham. Buch. Fishes of Ganges, p. 63, pl. 34, f. 18.

[3] *Ophiocephalus gachua*, Ham. Buch. Fishes of Ganges, p. 68, pl. 21, f. 21.

[4] *Coius cobojius*, Ham. Buch. Fishes of Ganges, p. 98, pl. 13, f. 33. Lieutenant Daldolf, who described this fish under the name of *Perca scandens*, does not assert that it climbs "a cocoa-nut tree," but that he took one from the cleft of "a palmira tree," five feet above a tank, and the leaves of which commence from close to the ground. The Tamils term it in places, according to Dr Jerdon, "Pannieyri," or "climbers of palmira trees.

[5] *Chanda ranga*, Ham. Buch. Fishes of Ganges, p. 113, pl. 16, f. 38.

[6] *Chanda nama*, Ham. Buch. Fishes of Ganges, p. 109, pl. 39, f. 37.

[7] *Coius nandus*, Ham. Buch. Fishes of Ganges, p. 96, pl. 30, f. 32.

[8] *Cobitis pangia*, Ham. Buch. Fishes of Ganges, p. 355, MS. drawings No. 51.

[9] *Macropteronotus magur*, Ham. Buch. Fishes of Ganges, p. 146, pl. 26, f. 45.

17. *Kamách singi*, Silure [Fossile.[1] A fish very much resembling the former in appearance and qualities. It is reckoned impure for Bráhmans, who eat the other readily.

18. *Pobá*, Silure,[2] a small pretty fish, of an excellent flavour.

19. { *Boyáli* / *Keyáli* } Silure,[3] a large ugly fish, which often grows to six feet in length. By the natives, it is thought good, but does not suit my taste. The Bráhmans consider it impure.

20. *Labhuya*, Silure.
21. *Gágrá*, Pimelode barbu ?
22. *Ritá*, Pimelode.[4]
23. *Ari*, Pimelode.[5]
24. *Bágh Ari*, Pimelode.[6]

} Large ugly fishes, but thought very good by most natives.

25. *Gágot*, Pimelode, a small fish, with many bones.

26. *Váchá*, Pimelode,[7] a fish about the size of a herring, and considered as very good by the natives.

27. *Báns-patari*,[8] Pimelode, a beautiful small fish, which, from its shining colours and shape, is, by the natives, compared to a bamboo leaf.

28. *Tengorá*,[9] Pimelode, a small pretty fish that the natives think very good.

29. *Kánkilá*, Esocc,[10] an excellent small fish.

30. *Pánchok*, Esoce,[11] a very small fish.

31. *Ghobol*, Muge,[12] a fish about a foot long, which swims with its eyes above water. It is very good to eat.

32. *Telar*, Clupee,[13] a fish about the same size and value.

33. *Phaluyi*,[14] Myste, a fish about the same size and value.

[1] *Silurus singio*, Ham. Buch. Fishes of Ganges, p. 147, pl. 37, f. 46.
[2] *Silurus pabda*, Ham. Buch. Fishes of Ganges, p. 150, pl. 25, f. 47.
[3] *Silurus boalis*, Ham. Buch. Fishes of Ganges, p. 154, pl. 29, f. 49.
[4] *Pimelodus rita*, Ham. Buch. Fishes of Ganges, p. 165, pl. 24, f. 53.
[5] *Pimelodus arius*, Ham. Buch. Fishes of Ganges, p. 170.
[6] *Pimelodus bagarius*, Ham. Buch. Fishes of Ganges, p. 186, pl. 7, f. 62.
[7] *Pimelodus vacha*, Ham. Buch. Fishes of Ganges, p. 196, pl. 19, f. 64.
[8] *Pimelodus anguis*, Ham. Buch. Fishes of Ganges, p. 180, pl. 29, f. 59.
[9] *Pimelodus carcio*, Ham. Buch. Fishes of Ganges, p. 181, pl. 3, f. 61, erroneously termed *P. tengara*.
[10] *Esox cancila*, Ham. Buch. Fishes of Ganges, p. 213, pl. 27, f. 70.
[11] *Esox panchax*, Ham. Buch. Fishes of Ganges, p. 211, pl. 3, f. 69.
[12] *Mugil corsula*, Ham. Buch. Fishes of Ganges, p. 221, pl. 9, f. 97.
[13] *Clupea telara*, Ham. Buch. Fishes of Ganges, p. 241, pl. 2, f. 72.
[14] *Mystus kapirat*, Ham. Buch. Fishes of Ganges, p. 235.

34. *Chital*, Myste.[1] This grows to a very large size, and is a rich, fine-tasted fish; but the higher castes do not like it, because it feeds on dead animals.

35. *Karati*,[2] Clupanodon, a small fish of little value.

36. *Chelo*,[3] Cyprin. This is one of a numerous tribe of Indian fishes, which resemble the Cyprin clupeoide. It is very common in every part of Bengal, but is of little value.

37. *Elango*.[4]
38. *Sangpuyi*.[5]
39. *Dangriko*.[6]
40. *Deborí*.[7]
41. *Titpunthi*.[8]
42. *Punthi*.[9]

These are all small species of the Cyprin, which are very common, and much used by the natives, but are very poor eating. Some of them are very beautiful, especially Nos. 39 and 40; Nos. 41 and 42 are the best for eating.

43. *Saran-punthi*, Cyprin Bulatmai? A beautiful fish which grows to two feet in length. It is not much valued.

44. *Kálbasu*, Cyprin,[10] an ugly black fish strongly resembling the Barbel. It grows often to a foot and a half in length, and sometimes to double that size. It is considered by the natives as a good fish, and is both light and well tasted; but it has many small bones.

45. *Rohit*, Cyprin.[11] *Rui* of the English in Bengal. This is one of the most beautiful of fresh-water fishes, being finely shaped, and elegantly adorned with green, purple, gold, and silver, constantly changing one into the other. It thrives well in ponds, but is best where found in running streams. The fish is much and deservedly valued, being light and well flavoured. It is only inferior to the following in not being so rich. It grows to about three feet in length.

46. *Kátal*, Cyprin.[12] When taken from rivers with a good stream,

[1] *Mystus chitala*, Ham. Buch. Fish. Ganges p. 236, Reproduced in "Illustrations of Indian Zoology."

[2] ? *Clupanodon chapra*, Ham. Buch. Fish. Ganges. p. 248.

[3] *Cyprinus bacaila*, Ham. Buch. Fish. Ganges, p. 265, pl. 8, f. 76.

[4] *Cyprinus rasbora*, Ham. Buch. Fish. Ganges, p. 329, pl. 2, f. 90.

[5] *Cyprinus cotio*, Ham. Buch. Fish. Ganges, p. 339, pl. 39, f. 93.

[6] *Cyprinus danrica*, Ham. Buch. Fish. Ganges, p. 325, pl. 16, f. 88.

[7] *Cyprinus devario*, Ham. Buch. Fish. Ganges, p. 341, pl. 6, f. 94.

[8] *Cyprinus titius*, Ham. Buch. Fish. Ganges, p. 315, MS. drawing present in 1839.

[9] *Cyprinus puntio*, Ham. Buch. Fish. Ganges, p. 318.

[10] *Cyprinus calbasu*, Ham. Buch. Fish. Ganges, p. 297, pl. 2, f. 83.

[11] *Cyprinus rohita*, Ham. Buch. Fish. Ganges, p. 301, pl. 36, f. 85.

[12] *Cyprinus catla*, Ham. Buch. Fish. Ganges, p. 287, pl. 13, f. 81.

this is perhaps the best fresh water fish in the world. The body is white, light and firm, and the head and belly are remarkably fat without being luscious or heavy. It grows to a very large size, and weighs from 16 to 50 lb. Though only a clumsy made fish, it is remarkably active and strong, and frequently springs over the net with great violence. Its colours are not remarkable for beauty.

47. *Kuchiyá*, Unibranchaperture.[1] An eel as good as the kind common in Europe. The natives reject it from its near approach to a serpent.

Besides these, I observed many other fishes in the District, especially the following:—

48. *Khaskhasiyá*, Mugé,[2] a small fish.

49. *Dari*,[3] Cobite. A beautiful small fish.

50. *Korki-tengorá*,[4] Pimelode. }
51. *Kavasi-tengorá*, Pimelode.[5] }
52. *Rám-tengorá*, Pimelode.[6] } Small fishes of little value.
53. *Changrármárá*, Pimelode.[7] }
54. *Uruya*, Pimelode.[8] }

55. *Silon*, Pimelode.[9] A large ugly fish much used by the natives.

56. *Chakundá*, Clupanodon.[10] A small fish of little use.

57. *Ilish*, Clupanodon.[11] I have already mentioned the fishery of this species in the Mahánandá, which is almost the only river in this District which it frequents. This species is called Sable-fish by the English, and is the most important in Bengal. It has a strong resemblance to that called la Feinte by Lacepéde, but has no teeth. During the floods it ascends in immense numbers to spawn in the Ganges and its larger branches for 500 miles from the sea, and

[1] *Unibranchapertura cuchia*, Ham. Buch. Fish. Ganges, p. 16.

[2] *Mugil cascasia*, Ham. Buch. Fish Ganges, p. 217, MS. drawings, No. 68, *M. Kaskasiya.*

[3] *Cobitis dario*, Ham. Buch. Fish. Ganges, p. 354, pl. 29, f. 95.

[4] *Pimelodus tengara*, Ham. Buch. Fish. Ganges, p. 183, pl. 23, f. 60, where it is erroneously marked *P. batasius*, and is amongst the MS. drawings, No. 22, as *Pimelodus kurki.*

[5] *Pimelodus cavasius*, Ham. Buch. Fish. Ganges, p. 203, pl. 11, f. 67.

[6] *Pimelodus rama*, Ham. Buch. Fish. Ganges, p. 176, pl. 3, f. 55.

[7] *Pimelodus chandramara*, Ham. Buch. Fish. Ganges, p. 162, MS. drawings, No. 13.

[8] *Pimelodus urua*, Ham. Buch. Fish. Ganges, p. 177, and MS. drawings, No. 15, as *P. urua.*

[9] *Pimelodus silondia*, Ham. Buch. Fish. Ganges,, p. 160, pl. 7, f. 50.

[10] *Clupanodon chacunda*, Ham. Buch. Fish. Ganges, p. 246.

[11] *Clupanodon ilisha*, Ham. Buch. Fish. Ganges, p. 243.

retires as the rivers decrease. It is usually about a foot and a half long, and is a rich, highly flavoured fish. In taste it resembles somewhat both the salmon and herring, to which last it has the strongest affinity. It is, however, rather heavy and difficult of digestion, and contains a vast number of small bones, so as to require much precaution in eating. These bones are destroyed, when it is cured with tamarinds, and the fish then becomes a very relishing morsel.

58. *Peyali*,[1] Cyprin, a small fish of little value.

59. *Kurso*, Cyprin.[2] This sometimes grows to a foot and a half in length, but is little valued.

60. *Hayali*, Cyprin.[3]
61. *Tilo*, Cyprin.[4] } Two small fishes of little value.

62. *Mrigal*, Cyprin.[5] A most beautiful fish like the Rohit, and almost as good, but it does not grow to quite so large a size, being seldom found more than two feet in length.

63. *Kharki*.[6]
64. *Bhongan*.[7] } These are two beautiful fishes, somewhat between a carp and a mullet, as their lower jaw resembles that of the latter. They grow to about a foot in length, and are tolerably good to eat.

The crustaceous fishes are perhaps more valued by the natives of Bengal than the fish properly so-called, and are excellent seasoning to eat with a food so insipid as rice. In some parts, especially near the sea, they are of many different kinds and sizes, from that of a shrimp to those which are larger than lobsters. Those that are mostly used are of the oblong kind, and are called by the generic name, Chingri. In almost every ditch near the sea they are found in myriads, but in Dinájpur, except near the Mahánandá and the lower part of the Karatoyá, they are very scarce. In the Mahánandá there are three kinds:—

1. *Jhingo*, a small prawn.

2. *Tenguyo*, a large prawn.

3. *Mauho*, a crawfish, which is about fifteen inches in length, and as much in circumference.

Crabs frequent the fresh waters of Bengal, and are distinguished

[1] *Cyprinus barila*, Ham. Buch. Fish. Ganges, p. 267, MS. drawings No. 134.
[2] *Cyprinus cursa*, Ham. Buch. Fish. Ganges, p. 290, MS. drawings No. 119.
[3] *Cyprinus hoalius*, Ham. Buch. Fish. Ganges, p. 336.
[4] *Cyprinus tila*, Ham. Buch. Fish. Ganges, p. 274.
[5] *Cyprinus mrigala*, Ham. Buch. Fish. Ganges, p. 279, pl. 6, f. 79.
[6] *Mugil corsula*, Ham. Buch. Fish. Ganges, p. 221, pl. 19, f. 97.
[7] *Cyprinus elanga*, Ham. Buch. Fish. Ganges, p. 281, MS. drawings No. 103.

from the oblong kinds of crustaceous fishes by the generic term Kánkará. They are reckoned much inferior to the long-shaped fishes of this kind, and are, indeed, considered impure by the higher ranks, who eagerly devour the others. In this District there are many crabs, but few of them grow to a size that would fit them for a European table. They are chiefly found in the parts near the Nagar Tángan and Punarbhabá that in the rainy season are entirely inundated. When the inundation retires, these parts may be observed covered with little heaps of earth about a foot high and eight inches in diameter, and in the top of each is a perforation. Under these are the lurking places of the crabs, which retire there for the dry season, and live in pairs. According to the report of the natives, these animals, as the water subsides, dig perpendicular shafts about three inches in diameter and seven or eight cubits deep, and when at that depth they form a chamber about a foot in diameter, which contains water until the next inundation, and in which a male and female crab take up their residence. I attempted to dig several, but being too early in the season, the water always rose upon me before I reached the chamber.

FISH AND FISHERIES OF RANGPUR DISTRICT.

In the Brahmaputra, as well as the Ganges, there are two kinds of crocodile, which at Goálpárá are both called *Kumir*, but each has a specific name. The *Crocodilus Gangeticus*[1] is called *Ghariál*, and the other is called *Bonchá*.[2] This approaches so near in its form to the crocodile of the Nile, that for a long time I considered it as the same; but its manners are very different from those attributed to the animal of Egypt; and in the lower parts of Bengal we have what appears to me another species of crocodile called *Hansa Kumir*, the manners of which seem more conformable to the descriptions of the Nilotic quadruped.

The Gánrárs, who also kill both kinds of crocodile, inform me that they have killed the Bonchá 15 feet in length, and one of this size is much heavier than a Ghariál of 18 feet long, which is the largest that they have seen. In the water, the Bonchá attacks both men and cattle, but on shore he is shy and timid, and it requires great caution to be able to approach near him, as on the least noise he rushes to the water. The Bonchá usually frequents ponds and marshes, and it is only when these become entirely dry that he retires to a river. He lives in holes which he digs in the bank of the pond or river, and I knew a party of hunters who were a good deal surprised, if not alarmed, by digging out a crocodile when they expected only a harmless jackal. In these holes they lay from twenty to thirty eggs between the 10th of February and the 10th of March, and the old ones take care of the young for a month, and give them fish to eat, after which they are able to provide for themselves.

The Ghariál is esteemed a much purer animal than the Bonchá, and never lives in stagnant waters nor in holes of the earth. It never attacks men or cattle, and lives entirely on fish. The female pro-

[1] *Gavialis Gangeticus*, Gmelin.

[2] The two species of crocodile mentioned under the term "Bonchá" are the *Crocodilus palustris*, Less., or the common marsh crocodile, and the *C. porosus*, Schn., generally known as the "man eater."

duces eggs at the same season with the Bonchá. She digs a trench in the sand on the shore of the river, and there deposits ten or twelve eggs, which she covers with sand, and watches all day, but at night retires into the river, being remarkably shy and timid on shore. The young are hatched between the 13th of May and 13th of June, and for a month require the care of their mother. The eggs of the Ghariál are considered as a remedy for the smallpox in the human species, and for the disease in kine, which in the language of Bengal is called by the same name (Basanta). In Ava the eggs are commonly sold in the markets for food, and in many parts of India the flesh of both kinds of crocodile is greedily devoured. I was indeed informed that the Gánrárs of this District did not hesitate to eat them; but this they denied, probably thinking it disgraceful. When these fishermen are able to steal upon either kind of crocodile, which requires great precaution, they strike him with a harpoon which has one iron prong about 3 inches in length, and which is barbed on one side. The plug of wood into which the iron is fastened is connected with the shaft, which is very light bamboo, by a rope of about 12 feet long. In order to make this rope very strong, and at the same time light, it is laid in a very curious manner. It consists of fifteen or sixteen threads very well twisted, and each containing three lays. The threads are very slightly twisted, and are kept together by knots tied at the distance of a span from each other. This cord is neatly rolled round the shaft. The Gánrár throws his harpoon with great certainty at from 15 to 20 yards' distance. On striking the crocodile the head comes out, the rope unrolls, and the animal rushing into the water, the shaft directs the Gánrár where to pursue. This he does in a fast-rowing boat, and takes the first opportunity of striking with another harpoon, which has a strong iron, 5 inches long, and as thick as the little finger; with this, which has a strong rope, he can drag the crocodile on shore. The omentum of both kinds of crocodile yields an oil which is used for the lamp. The omentum of a Bonchá does not give above 3 sers (of 60 S. W. = lb. $4\frac{64}{100}$), while that of the Ghariál gives from 10 to 15 sers (from lb. $15\frac{4}{10}$ to $23\frac{1}{10}$).

Notwithstanding the great number of rivers and lakes or marshes in this District, the people are but indifferently supplied with fish.

Salt is by far too expensive to be employed in preserving fish; but, besides the method of preserving these animals by beating them with vegetable substances, which is practised in the rainy season, a great

quantity is preserved by merely drying them in the sun, which is practised in the dry season alone, and chiefly in the two eastern divisions, as the principal demand is from Bhután and the Gáros. All along the great Tistá, however, some fish is dried in the spring for the supply of the rainy season. The Bijni Rájá, who holds lands of Bhután as well as of the Company, pays his tribute to the former power in dried fish, which he chiefly procures from his estates that are subject to the Company; but this supply is not sufficient for the demand of the Bhután market, and the Deb Rájá, who seems to have a monopoly of all foreign commerce, sends agents, especially into the northern half of the division of Dhubri, and makes large purchases. The fish dried on the left of the Brahmaputra are sent chiefly to the markets where the Gáros deal, and next to salt, is, perhaps, the most important article that is sold to these people. A small quantity of fish is also dried on the banks of the Brahmaputra, on the lower part of its course. Some of this is distributed through the western parts of the District; but the greater part goes to the Gáros, who border on the District of Maimansinh. Fish prepared in this manner is called sukti, which merely signifies dry, as if this kind of fish were the only dry thing of any importance. To European taste and smell it is altogether insupportable, but the two nations that chiefly purchase, are far from being select in their eating, and all the people of the two eastern divisions like this fetid aliment.

Most of the fish cured in this manner, as I have before said, is caught in lakes, marshes, and old channels of rivers, but is sent to the sands of the Brahmaputra to be dried. The heads and guts of the fish are thrown away, but the fins and scales are allowed to remain. The fish, if small, is split in two, if large, it is divided into four slices. These are spread out to a sun that is intensely hot, on the extensive sands of the river where there are no insects, and where in the day everything is parched and withered by a dry heat. At night, the fish are secured in a shed from the dews, which are abundant at all seasons. At the beautiful lakes called Toborong, north from Jogigophá, where this fishery is most extensive, and where from twelve to fourteen hundred maunds may be annually dried, the fish are divided into four sorts.

The following is a list of the principal varieties of fish found in Rangpur.

1. The *Tenpá* of Goálpárá and Dinájpur (No. 1) *katkatiyá*[1] of

[1] *Tetrodon fluviatilis*, Ham. Buch. Fish. Ganges, p. 6, pl. 30, f. 1.

Lakshmípur, *Pukhuriyá Patká* of Calcutta, is a species of Tetrodon.

2. The *Deokátá*[1] of Báruni, a species of Syngnathe, is a small fish which is of little or no use, but is remarkable for the manner in which its eggs are hatched. The body is angular, and the belly is concave below, but with a high sharp ridge on each side. Two longitudinal rows of eggs are deposited between these ridges and adhere to the belly, much in the same manner as the eggs do under the tail of a lobster. It is stated by naturalists, that the belly of some species of this genus of fishes, actually splits open to make way for the young, but, if that really be the case, this kind differs very much from the others.

3. The *Nader Vaim* of Goálpárá, *Tárá vaim*[2] of Calcutta, and *Gongti* of Pátnítalá (Dinájpur list, No. 2) is the Macrognathe armé of Lacepéde.

4. The *Vaim* of Goálpárá and Calcutta, the *Vám*[3] of Pátnítalá (No. 3, Dinájpur) is the Macrognathe aiguillonné of Lacepéde.

5. The *Gochi* of Rangpur, the *Gonger Gongti* of Pátnátalá (Dinájpur list, No. 4) and *Pánkál*[4] of Calcutta is another species of Macrognathe.

6. The *Báliyá* of Rangpur, *Pukhuriyá báliyá*[5] of Calcutta, *Bele báliyá* and *Pánimuthrá* of Goálpárá, is perhaps the Gobie eleotre of Lacepéde. (See Dinájpur list, No. 5.)

The following six small fishes, with very bright and beautiful colours, all belong to one very natural genus, the Trichopode of Lacepéde.

7. *Khalishá*[6] everywhere (Dinájpur, No. 6).

8. *Beji khalishá*[7] of Goálpárá.

9. *Buk sontak*[8] and kalak of Goálpárá.

1 *Syngnathus deocata*, Ham. Buch. Fish. Ganges, p. 14, and MS. drawings No. 80, marked *Sygnathus deokuta*, 6 7-10ths inches in length.

2 *Macrognathus armatus*, Fish. Ganges, p. 28, pl. 37, f. 6.

3 *Macrognathus aculeatus*, Fish. Ganges, p. 29.

4 *Macrognathus pancalus*, Ham. Buch. Fish. Ganges, p. 30, pl. 17, f. 7.

5 *Gobius gutum*, Ham. Buch. Fish. Ganges, p. 50, and MS. drawings No. 74, 2⅓ inches in length.

6 *Trichopodus colisa*, Ham. Buch. Fish. Ganges, p. 117, pl. 15, f. 40.

7 *Trichopodus bejeus* Ham. Buch. Fish. Ganges, p. 118, No. 36 MS. drawings marked T, *beje* is identical with T. *colisa*, pl. 15, f. 40.

8 *Trichopodus cotra*, Ham. Buch. Fish. Ganges, p. 119, MS. drawings No. 40, 2 2-10ths inches long, marked *T. cœrulescens*.

10. *Sádá khalishá*[1] of Goálpárá.

11. *Chuná khalishá*[2] of Goálpárá.

12. *Ḷál khalishá*[3] of Goálpárá.

We have the following six species of another very natural genus the Opheocephale of Lacepéde.

13. The *Cheng*[4] of Goálpárá, Calcutta, and Pátnítalá, and *Gichhuya* of Lakshmípur.

In the springs and clear mountain rivulets of Hábrághát and Mechpárá is found a fish called by the same name,[5] which is entirely of a bright orange colour, and in this alone differs from the common cheng, which is of a dirty green, variegated with black. The number of rays in all the fins, the shape, tenacity of life, and all other circumstances are so exactly alike, that I am inclined to attribute the difference of colour to the different situation in which the animal has been placed, and that the bright orange glow is owing to its having lived in pure mountain streams, instead of muddy rivers and ponds. The difference of water, I know, in several instances, produces great changes, although none so remarkable as this. The belly of the Tetrodon, No. 1, in marshes covered with weeds, becomes entirely black, and the whole colour of the Trichopode, No. 9, is changed in the same manner by a similar situation.

14. The *Garui*[6] of every place, when large, at Calcutta, is called *Látá*. In some part of Dinájpur it is also called *Bharayi* (see list No. 8).

15. The *Motá* of the Tamuls, the *Soli* of Goálpárá the *Saul* or *Sol*[7] of Calcutta and Lakshmípur and the *Sola* of Madras is the Opheoce-

[1] *Trichopodus sota*, Ham. Buch. Fish. Ganges, p. 120, and MS. drawings No. 39, marked *T. fuscus*, 1 7-10th inches long.

[2] *Trichopodus chuna*, Ham. Buch. Fish. Ganges, p. 121, and MS. drawings No. 38, 1 9-10th inches long, marked *T. vittatus*.

[3] *Trichopodus lalius*, Ham. Buch. Fish. Ganges, p. 120, and MS. drawings No. 37, marked *T. ruber*, 2 inches long.

[4] *Ophiocephalus gachua*, Ham. Buch. Fish. Ganges, p 68, pl. 21, f. 21.

[5] *Ophiocephalus aurantiacus*, Ham. Buch. Fish. Ganges, p. 69, pl. 23, f. 22. In the Ganjám District, I obtained in 1868, a specimen of the climbing perch, *Anabas scandens*, of an orange colour, it appeared very healthy, and the fishermen asserted such were not uncommon, and that their anomalous coloration was not dependant on the water they inhabited, nor on the state of their general health.

[6] *Ophiocephalus lata*, Ham. Buch. Fish. Ganges, p. 63, pl. 34, f. 18.

[7] *Ophiocephalus wrahle*, Ham. Buch. Fish. Ganges, p. 60, pl. 31, f. 17.

phale wrahle of Lacepéde. This fish grows to about two feet in length, and inhabits both marshes and rivers, salt and fresh, and is reckoned very good to eat.

16. The *Chená*[1] of Goálpárá is so nearly allied to the former, that I have some doubt of its being in reality of a different species, but it is considered as different by the natives, who say that it never grows to half the size, and it wants some spots on the fins by which the other is distinguished. It must be observed, that the different fishes of this genus are apt to vary considerably in the number of rays in their fins, which renders it difficult to ascertain mere accidental varieties from kinds that are really different.

17. The *Gajál* of Goálpárá,[2] Pátnítalá (Dinájpur, No. 7), and Lakshmípur, and the *Sol* of Calcutta is another Ophiocephale.

18. The *Borká*[3] of Goálpárá is still another nearly related to the above; but its colours and manners are very different. It grows to about three feet in length, and is a very ugly lurid animal, although it has a variety of strong and bright colours. It is thought very good, but although much sought after, is rarely caught. The reason assigned for this is, that it lives either under rocks, or forms holes in the banks in which it constantly resides, and only puts out its head to procure food, so that it cannot be taken by a net. It is said to be caught with a trap made of wide hollow bamboo, one end of which is placed against the mouth of the hole, and a bait of oil-cake is fixed to a spring some way up the bamboo. The fish enters to eat the oil-cake, and lets loose the spring, by which a valve shuts behind and prevents a retreat.

19. The *Galpuri*[4] of Goálpárá, and *Bhedá* of Calcutta, is a small Labrus, found in tanks and ditches.

20. The *Ságar Koyi*[5] of Goálpárá, the *Kai* or *Kubaji* of Calcutta (Dinájpur list, No. 10) is the Lutjan grimpeur of Lacepéde.

21. The *Bhedá*[6] of Goálpárá and Dinájpur (List No. 14) is the *Nándas* of Calcutta. If the former is a Lutjan, this also ought to be placed in the same family. Both, in my opinion, have the characters

[1] *Ophiocephalus chena*, Ham. Buch. Fish. Ganges, p. 62, ? *O. Stewartii*, Playfair.

[2] *Ophiocephalus marulius*, Ham. Buch. Fish. Ganges, p. 65, pl. 22, f. 19.

[3] *Ophiocephalus barca*, Ham. Buch. Fish. Ganges, p. 67, pl. 35, f. 20.

[4] *Labrus badis*, Ham. Buch. Fish. Ganges, p. 70, pl. 25, f. 23.

[5] *Coius cobojius*, Ham. Buch. Fish. Ganges, p. 98, pl. 13, f. 33.

[6] *Coius nandus*, Ham. Buch. Fish. Ganges, p. 96, pl. 30, f. 32.

of Holocentres, but I am doubtful concerning the propriety of this arrangement.

Next follows a class of Bengali fishes, that contain many species which are eaten by the natives, but are too small for European cookery. The only one that I can trace in Lacepéde, is that called by him Centropome cambasse, which is not found in this part of Bengal. Although the whole appears to me to have the character of this genus Lutjan, I shall in deference to his arrangement, call them Centropomes. Those which I have observed in this District are five, as follows :—

22. The *Chándá*[1] of Goálpárá and Calcutta, the *nam chándá* of Dinájpur, No. 13.

23. The *Bakul chándá*[2] of Goálpárá.

24. The *Phul chándá*[3] of Goálpárá.

25. The *Bagurá chándá*[4] of Goálpárá.

26. The *Lál chándá*[5] of Goálpárá, the *kátchándá* of Calcutta.

In this District I observed the following eight species of Cobitis, none of which are in much repute with the natives, and none are described by Lacepéde.

27. The *Dari*[6] of Rangpur and Dinájpur, No. 49.

28. The *Gengto*[7] of Goálpárá, a pretty fish like the former.

29. The *Pangiyá*[8] of Goálpárá and Dinájpur, No. 15.

30. The *Bute*[9] of Goálpárá, the *Gunte* of Calcutta.

31. The *Botiá*[10] of Goálpárá.

32. The *Turi*[11] of Goálpárá.

[1] *Chanda nama*, Ham. Buch. Fish. Ganges, p. 109, pl. 39, f. 37.

[2] *Chanda baculis*, Ham. Buch. Fish. Ganges, p. 112, and MS. drawings No. 2, 1 & 2-10th inches long. *Centropomus ? bahrul.*

[3] *Chanda phula*, Ham. Buch. Fish. Ganges, p. 111, and MS. drawings No. 1, 1 & 7-10th inches long. *Centropomus phulchanda.*

[4] *Chanda bogoda*, Ham. Buch. Fish. Ganges, p. 111, and MS. Drawings No. 3, 2 & 3-10th inches long. *Centropomus bogoda.*

[5] *Chanda lala*, Ham. Buch. Fish. Ganges, p. 114, pl. 21. f. 39.

[6] *Cobitis dario*, Ham. Buch. Fish. Ganges, p. 354, pl. 29, f. 95

[7] *Cobitis geto*, Ham. Buch. Fish. Ganges, p. 355, pl. 11, f. 96.

[8] *Cobitis pangia*, Ham. Buch. Fish. Ganges, p. 355, MS. drawings No. 51, as *Cobitis pangya.*

[9] *Cobitis guntea*, Ham. Buch. Fish. Ganges, p. 353, and MS. drawings No. 58, as *Cobitis gunte.*

[10] *Cobitis botia*, Ham. Buch. Fish. Ganges, p. 350, and MS. drawings No. 50, as *Cobitis botya.*

[11] *Cobitis turio*, Ham. Buch. Fish. Ganges, p. 358, and MS. drawings No. 40, as *Cobitis turi.*

33. The *Bilturi*[1] of Goálpárá.

34. The *Ghorgotá*[2] of Behar. This is the largest and is often found six inches in length.

I now proceed to a very numerous class of fishes, which by Linnæus were included in one genus Silurus, but the number having increased beyond all expectation, this tribe has been subdivided by Lacopéde. At Goálpárá, all these fishes are called Chingri, a name which, at Calcutta is applied to oblong crustaceous fishes. The following six belong to the Silure of Lacepede.

35. *Gharuyá*[3] of Calcutta, Lakshmípur and Goálpárá, the *kochá* of the Tistá. This is a very common fish, but is not eaten by the higher classes, because it is supposed to feed on excrement. It grows to three feet in length, and although its colours are green and silver, has a very lurid ugly appearance.

36. The *Kochá*[4] of Goálpárá is said to be a very different kind of the same family, and is reckoned remarkably good, but it is so rare, that I could procure none alive. It grows to a very large size.

37. The *Pábdá* or *Pábho*[5] of Goálpárá is a fish which grows to about a foot in length, and is a different species from the *Pábdá*[6] of Calcutta, or *Pobá* of Dinájpur (No. 18), but is of a quality equally excellent.

38. The *Káni Pábdá*[7] of Goálpárá, is a smaller fish, nearly related to the above, and to the *Pábdá* of Calcutta. Its size and quality is like the latter.

39. The *Boáli*[8] of every part of Bengal. In some parts of Dinájpur (No. 19), it is, however, called *Keyáli*.

40. The *Singi*[9] of Calcutta and Goálpárá, the *kamách síngi* of Dinájpur (No. 17) is the Silure fossile of Lacepéde.

[1] *Cobitis bilturio*, Ham. Buch. Fish. Ganges, p. 358, and MS. drawings No. 49, as *Cobitis bilturi*.

[2] *Cobitis gongota*, Ham. Buch. Fish. Ganges, p. 351, and MS. drawings No. 55, as *Cobitis ghorgota*.

[3] *Silurus garua*, Ham. Buch. Fish. Ganges, p. 156, pl. 21, f. 50.

[4] This is perhaps the omitted first species of *Callichrons* from the "Fishes of the Ganges."

[5] *Silurus pabo*, Ham. Buch. Fish. Ganges, p. 153, pl. 22, f. 48.

[6] *Silurus pabda*, Ham. Buch. Fish. Ganges, p. 150, pl. 25, f. 47.

[7] *Silurus canio*, Ham. Buch. Fish. Ganges, p. 151, and might be MS. drawings No. 5, marked *Silurus kanipabda*, its pectoral spine is serrated and about 63 anal. rays, 69 in the text.

[8] *Silurus boalis*, Ham. Buch. Fish. Ganges, p. 154, pl. 29, f. 49.

[9] *Silurus singio*, Ham. Buch. Fish. Ganges, p. 147, pl. 37, f. 46.

41. The *Mágur*[1] is everywhere known by this name (Dinájpŭr, No. 16). but at Goálpárá it is also called *Madgur.* It is the Macropteronote grenouiller of Lacepéde.

42. The *Kajoli*[2] of Goálpárá, the *Kaylá* of Calcutta is a Malapterure. This has no electric qualities, like the species described by Lacepéde. It grows from 8 to 12 inches in length, is, for the tribe, rather a handsome fish, and by the natives is considered as good.

The genus of Pimelode is exceedingly numerous, and in this District I have observed no less than nineteen distinct species, besides two that are doubtful. I begin with those called Tengrá.[3]

The three following are longitudinally striped :—

43. That commonly called *Tengrá*,[4] without any addition, is sometimes called Pukhariyá at Calcutta, and Mosá at Goálpárá. This is the Tengorá of Dinájpur (No. 28.) It is reckoned good to eat.

44. The *Bish tengrá*[5] of Goálpárá, the *Korki tengorá* of Dinájpur (No. 50.)

45. The *Bátási tengrá*[6] of the Tistá, a fish still more like No. 43.

The three following are transversely barred :—

46. The *Kengya*[7] of Goálpárá, the Rám tengorá of Dinájpur (No. 52.)

47. The *Kauya tengrá*[8] of the Dharlá is a very ugly little fish, compared by the natives to a crow.

48. The *Keuyá tengrá* of the Tistá is a fish nearly related to the former, but has fine bright colours.

The two following have an uniform obscure colour :—

[1] *Macropteronotus magur*, Ham. Buch. Fish. Ganges, p. 146, pl. 26, f. 45.

[2] *Malapterurus coila*, Ham. Buch. Fish. Ganges, p. 158, and MS. drawings, No. 7, as *Malapterure kazali.*

[3] It is much to be regretted that considerable confusion has occurred amongst these species, as published in the "Fishes of the Ganges," but these papers of H. B.'s and the MS. drawings quite clear up all disputable points.

[4] *Pimelodus carcio*, Ham. Buch. Fish. Ganges, p. 181, pl. 3, f. 61, erroneously termed *P tengara.*

[5] *Pimelodus tengara*, Ham Buch. Fish. Ganges, p. 183, pl. 23, f. 60, where it is erroneously marked *P. batasius* is amongst the MS. drawings, No. 22, as *Pimelodus kurki.*

[6] *Pimelodus batasio* Ham. Buch. Fish. Ganges, p. 179, and MS. drawings, No. 11, as *Pimelodus batasi.*

[7] *Pimelodus rama*, Ham. Buch. Fish. Ganges, p. 176, pl. 3, f. 55.

[8] *Pimelodus cavia*, Ham Buch. Fish. Ganges, p. 188.

49. The *Páthari tengrá*[1] of Goálpárá, the Kavasi tengorá of Dinájpur (No. 51), is the most common fish in several parts, such as Alípur, and is there called simply Tengrá, although under that name also several of the other kinds are commonly sold.

50. The *Gágor* of Goálpárá, the Gágrá tengrá of Calcutta, the Gágot of Dinájpur (No. 25.)

Next follow five beautiful small fishes, more or less diaphanous, some of which also are occasionally called Tengrá.

51. The *Changrármárá*[2] of the Mahánandá and Dinájpur, No. 53.

52. The *Rám tengrá*[3] of Goálpárá.

53. The *Tengrá*[4] of Goálpárá.

54. The *Baradaha*[5] of Goálpárá is the *Uruya* of Dinájpur, No. 54.

55. The *Dóyá*[6] of Goálpárá, the Angi of Lakshmípur, the Bánspatari of Dinájpur, No. 27.

Next follow six large lurid Pimelodes, thought good by the natives.

56. The *Ritá*[7] of every place (Dinájpur, No. 22.)

57. The *Pángás*[8] of Goálpárá.

58. The *Silon*[9] of Goálpárá and Dinájpur (No. 55), the Silondiávachá of Calcutta.

59. The *Váchá*[10] of Goálpárá, Calcutta, and Dinájpur (No. 26), the Kángon of Lakshmípur.

60. The *Ari*[11] of every place (see Dinájpur, No. 23.)

61. The *Bágh Ari*[12] of every place (see Dinájpur, No. 24.)

Somewhat akin to the two last are the three following fishes, although even the two first can with difficulty be considered as Pimelodes, and the last is still more remote from any tribe of fishes established by Lacepéde:—

[1] *Pimelodus cavasius*, Ham. Buch. Fish. Ganges, p. 203, pl. 11, f. 67.

[2] *Pimelodus chandramara*, Ham. Buch. Fish. Ganges, p. 162, and MS. drawings, No. 13, as *P. changdramara.*

[3] *Pimelodus rama*, Ham. Buch. Fish. Ganges, p. 176, pl. 3, f. 55.

[4] *Pimelodus tengana*, Ham. Buch. Fish. Ganges, p. 176, pl. 39, f. 58.

[5] *Pimelodus urua*, Ham. Buch. Fish. Ganges, p. 177, and MS. drawings, No. 15, as *Pimelodus urua.*

[6] *Pimelodus anguis*, Ham. Buch. Fish. Ganges, p. 180, pl. 29, f. 59.

[7] *Pimelodus rita*, Ham. Buch. Fish Ganges, p. 165, pl. 24, f. 53.

[8] *Pimelodus pangasius*, Ham. Buch. Fish. Ganges, p. 163, pl. 33, f. 52.

[9] *Pimelodus silondia*, Ham. Buch. Fish. Ganges, p. 160, pl. 7, f. 50.

[10] *Pimelodus vacha*, Ham. Buch. Fish. Ganges, p. 196, pl. 19, f. 64.

[11] *Pimelodus aor*, Ham. Buch. Fish. Ganges, p. 170.

[12] *Pimelodus bagarius*, Ham. Buch. Fish. Ganges, p. 186, pl. 7, f. 62.

62. The *Khonta*[1] of the Mahánandá is a small and remarkably ugly fish.

63. The *Bhot mágur*[2] of the Dharlá, if possible, is still uglier. The people of Bhután are said to be remarkably fond of it, from whence its name is derived. The people of Behar will not eat it.

64. The *Sisor*[3] of Behar is a very ugly fish, which is said to grow to seven or eight feet in length, and which few people will eat. The most remarkable thing about it is the tail, the upper ray of which is longer than the whole head and body. It is quite flexible, and tapers to a fine point. I have been able to learn nothing concerning the use of this strange appendage.

65. Of all the horrid animals of this tribe the *Chaká*[4] of this District is the most disagreeable to behold. It has the habit of the fishes called by Lacepéde Uranoscope and Cotte, that is, it conceals itself among the mud, from which, by its lurid appearance and a number of loose filamentous substances on its skin, it is scarcely distinguishable, and with an immense open mouth it is ready to seize any small prey that is passing along. In order that it may see what is approaching, the eyes are placed on the crown of the head. In its artificial characters it comes nearer the Plotose of Lacepéde than any other tribe, but from such a different habit, it must be considered as belonging to a genus not yet arranged by naturalists. All persons turn away from it with loathing.

66. The *Ghariyá* or *Ghore*[5] of Goálpárá, the Kánkilá of Calcutta and Dinájpur (No. 29) is an Esoce.

I shall next mention two small fishes which seem to have some affinity to the Stolephore of Lacepéde, although in all points they do not coincide with his description.

67. The *Bálitorá*[6] of Goálpárá. This name signifies sand-digger, as the fish, in order to look for its food, is said to make little trenches in the sand. The same name, on a similar account, is given to a

[1] *Pimelodus conta*, Ham. Buch. Fish. Ganges, p. 191, and MS. drawings, No. 17, as *P. conta*.

[2] *Pimelodus botius*, Ham. Buch. Fish. Ganges, p. 192.

[3] *Sisor rabdophorus*, Ham. Buch. Fish. Ganges, p. 208, and MS. drawings, No. 8, as *Hypostomus? sisor*.

[4] *Platystacus chaca*, Ham. Buch. Fish. Ganges, p. 140, pl. 28, f. 43.

[5] *Esox cancila*, Ham. Buch. Fish. Ganges, p. 213, pl. 27, f. 70.

[6] *Cyprinus balitora*, Ham. Buch. Fish. Ganges, p. 343, and MS. drawings. No. 44, as *Stolephorus balitora*.

species of Cyprin (No. 122) to which also the creature now in question has a considerable resemblance.

68. The *Sukati*[1] of Goálpárá is a fish evidently of the same genus with the Bálitorá, but still less resembles the character given of the Stolephore.

Next I shall mention two species of the Muge.

69. The *Khaskhasiyá*[2] of Goálpárá is a small fish of little value.

70. The *Muji*[3] and *Ingli* of Goálpárá, the Kholá of Dacca, the Khorsolá of Calcutta, the Ghobol of Dinájpur, No. 31.

Next follow two species of Clupi about the size of small herrings, which here are reckoned good to eat, but they are very full of bones.

71. The *Phoingyá*[4] of Goálpárá, the Gángphensá of Calcutta, the Telar of Dinájpur, No 32.

72. The *Phensá*[5] of Goálpárá and Calcutta.

Next follow three kinds of Myste.

73. The *Phaluyi* or *Phole*[6] of Goálpárá, Calcutta, Lakshmípur, and Dinájpur, No. 33.

74. The *Bara chital*[7] of Goálpárá, the Chital of Dinájpur, No. 34.

75. The *Chital* of Goálpárá has nearly the same qualities with the preceding.

Next follow four species of Clupanodon.

76. The *Ilish*[8] of every part of Bengal, see Dinájpur list, No. 57.

In this District this valuable fish is neither plentiful nor of good quality. The principal emigration, at spawning season, seems to follow the Padmá (Great Ganges R.), and Bhágirathí (Húglí R.), with the intermediate rivers. Still, however, some ascend the Brahmaputra to Goálpárá, and detach parties up the Tistá and Dharlá, but these in particular are small and poor.

77. The *Manmin*[9] of Goálpárá, the *Chángpli* of Lakshmípur, the

[1] *Cyprinus sucatio*, Ham. Buch. Fish. Ganges, p. 347, and MS. drawings, No. 45, as *Stolephorus sukati*.

[2] *Mugil cascasia*, Ham. Buch. Fish. Ganges, p. 217, and MS. drawings, No. 68, three inches, long, as *Mugil kaskasiya*.

[3] *Mugil corsula*, Ham. Buch. Fish. Ganges, p. 221, pl. 9, f. 97

[4] *Clupea telara*, Ham. Buch. Fish. Ganges, p. 241, pl. 2, f. 72.

[5] *Clupea phasa*, Ham. Buch. Fish. Ganges, p. 240.

[6] *Mystus kapirat*, Ham. Buch. Fish Ganges, p 235

[7] *Mystus chitala*, Ham. Buch. Fish. Ganges, p. 236, figure reproduced in the illustrations of Indian Zoology.

Clupanodon ilisha, Ham. Buch. Fish. Ganges, p. 243, probably not pl. 19, f. 73.

[9] *Clupanodon manmina*, Ham. Buch. Fish. Ganges, p. 247.

Gángkhayrá of Calcutta is a small fish, and like the two following, full of bones.

78. The *Khayrá*[1] of Goálpárá and Calcutta, the Chángpli of Lakshmípur, the Karati of Dinájpur (No. 35). At Goálpárá it is also known by this last name.

79. The *Morti* or *Mati*[2] of Goálpárá.

Next follow five fishes resembling the Cyprin couteau of Lacepéde and the Bendilisis, which I described in my account of Mysore, and which seem to be intermediate between the Clupea and the Cyprin. In fact, a common fish of Bengal, the Clupea Apalike of Lacepéde, serves to connect the two classes still nearer. The largest of the fishes that I am now to mention, does not exceed the size of a herring. Being very plentiful they are much used by all classes, but are not considered as remarkably good.

80. The *Ghorá chelá*[3] of Goálpárá is the largest.

81. The *Nariyali chelá*[4] of Goálpárá, the Chelá of Calcutta and Dinájpur (No. 36). This is the most common.

82. The *Phul chelá*[5] of Goálpárá.

83. The *Layu bukú*[6] of Goálpárá.

84. The *Layu kuli*[7] of Goálpárá.

These two differ considerably from the others.

Next follow seven kinds of the same genus Cyprinus, which resemble the former in having very thin bodies with the lateral line running parallel to their lower edge; and in general also approach to the tribe Esoce in the position of the dorsal fin. They are all small fishes of little value.

85. The *Bholá*[8] of Goálpárá seems nearly related to the Vaudoise and Dobule of Lacepede.

[1] *Clupanodon cortius*, Ham. Buch. Fish. Ganges, p. 249.

[2] *Clupanodon motius*, Ham. Buch. Fish. Ganges, p. 251, and MS. drawings, No. 88, as *Clupanodon moti.*

[3] *Cyprinus gora*, Ham. Buch. Fish. Ganges, p. 263, and MS. drawings, No. 146, *C. gora.*

[4] *Cyprinus bacaila.* Ham. Buch. Fish. Ganges, p. 265, pl. 8, f. 76.

[5] *Cyprinus phulo*, Ham. Buch. Fish. Ganges, p. 262, MS. drawings, No. 130, as *C. phul chela.*

[6] *Cyprinus laubuca*, Ham. Buch. Fish. Ganges, p. 260, MS. drawings, No. 139, as *C. laubuca.*

[7] *Cyprinus atpar*, Ham. Buch. Fish. Ganges, p. 259, and MS. drawings, No. 142, as *Cyprinus layukuli.*

[8] *Cyprinus bola*, Ham. Buch. Fish. Ganges, p. 274, and MS. drawings, No. 131, as *Cyprinus bhola.*

86. The *Buk rángí*[1] of Goálpárá. At Báruní, both this and the following were called Boreli.

87. The *Bálibholá*[2] of Goálpárá, the Boreli of Báruní on the Tistá.

88. The *Barilá*[3] of Goálpárá, the Chedri of the Tistá, the Khaksi near the Mahánandá, the *Peyali* of Dinájpur (No. 58).

89. The *Khaksá*[4] of the Mahánandá is in that vicinity considered as the male of the last, but it is a distinct species.

90. The *Chedrá*[5] of the Tistá and Dharlá being also considered as the male of No. 88. It has a strong resemblance to the last, but is abundantly entitled to be considered as a distinct species.

91. The *Chhepká*[6] of Rangpur, the Bánspátá of Lakshmípur, the Deborí of Dinájpur (No. 40).

Then follow eight kinds of Cyprins, which, on account of the structure of their under-jaw, have an affinity to the tribe of Muge of Lacepéde. Owing to this circumstance, there is a considerable confusion in their native appellations, some of them being considered as belonging to the genus Muge, while others are considered as Cyprins, and some have compound names, referring to this double affinity.

92. The *Rámchándá*[7] of Rangpur, the Elangá of Dinájpur (No. 37), and the Rasbará of Lakshmípur, has a strong resemblance to the last seven fishes, and its jaws do not exactly resemble those of the tribe Muge, the under one only being pointed, and entering a notch in the upper. Its affinity, however, to the others, whose jaws are exactly formed like those of the Muge, is confirmed by the identity of the native names.

93. The *Elangá*[8] of Goálpárá is called Bhángan at Calcutta, and at Patirám in Dinájpur (No. 64), and *Kuntá* at Lakshmípur.

[1] MS. drawings, No. 104, 3 inches long, it gives one much the idea of *Cyprinus morar*, p. 264, but it is placed as a distinct species in the Purniah list.

[2] *Cyprinus borelio*, Ham. Buch. Fish. Ganges, p. 336, and amongst the MS. drawings in Calcutta was one of this species as recorded by M'Clelland in 1839.

[3] *Cyprinus barila et chedrio*, Ham. Buch. Fish. Ganges, pp. 267, 268, and MS. drawings, No. 134, as *C. barila*.

[4] *Cyprinus cocsa*, Ham. Buch. Fish. Ganges, p. 272, pl. 3, f. 77.

[5] *Cyprinus chedra*, Ham. Buch. Fish. Ganges, p. 273, and MS. drawings, No. 111, as *C. chedra*.

[6] *Cyprinus devario*, Ham. Buch. Fish. Ganges, p. 341, pl. 6, f. 94.

[7] *Cyprinus rasbora*, Ham. Buch. Fish. Ganges, p. 329, pl. 2, f. 90.

[8] *Cyprinus elanga*, Ham. Buch. Fish. Ganges, p. 281, MS. drawings, No. 103.

94. The *Jauri*[1] of Goálpárá, is a similar small fish, which near the Karatoyá, is called Bhángan and kurá bátá at Calcutta.

95. The *Bhángan* of Goálpárá in the marshes between Díwánganj and Ghorághát is called *váchá*,[2] which at Goálpárá, Calcutta, &c., is a name given to a Pimelode (No. 55). At Calcutta the Cyprin of which I am now treating is called Bátá. It is the most common fish in the southern parts of the District, and grows to two feet in length. Like the following it is very beautiful, being of a fine silver colour, striped longwise with black dots.

96. The *Akhrá*[3] of the Karatoyá, is called Kharki-bátá at Calcutta, and simply Kharki in the central rivers of Dinájpur (No. 63). In Mysore it is called by its Carnatic (Karnáta) name, *Arizá*. It is the Kindu of the Tamuls.

97. The *Lachhimá* of Goálpárá is said to resemble the two former, but I omitted to procure it in time for examination. It is a very common fish.

98. The *Vogá-bhángan*[4] of Goálpárá very nearly resembles the Akhrá in proportions, but its colours are very different. It is reckoned much better for eating.

99. Nearly allied to the last, but shining with all the splendour of the Rohit, is one of the finest fishes of Bengal, everywhere called *Mrigal*.[5] See Dinájpur, No. 62.

I shall now mention twelve Cyprini which have nothing in their structure resembling other tribes, fine proportioned fishes, with bodies moderately compressed.

100. The *Rohut*[6] of every part of Bengal (see Dinájpur, No. 45).

101. The *Kurchhá*[7] of Goálpárá, by the people of Assam is called *Ghoni*. It grows to about a foot and a-half in length, but is not thought good. It is a very beautiful fish, finely striped, with dotted lines.

[1] *Cyprinus bata*, Ham. Buch. Fish. Ganges, p. 283, and MS. drawings, No. 114, as *Cyprinus curabata bata*.

[2] *Cyprinus cura*, Ham. Buch. Fish. Ganges, p. 280, probably identical with *C. bata*. He observes that it is "so nearly allied to the *Bata* that I have only noted the circumstances in which it differs from the account before given" But in his Purnah list he asserts it to be the *C. reba*.

[3] *Cyprinus acra*, Ham. Buch. Fish. Ganges, p. 284.

[4] *Cyprinus boga*, Ham. Buch. Fish. Ganges, p. 286, pl. 28, f. 80.

[5] *Cyprinus mrigala*, Ham. Buch. Fish. Ganges, p. 279, pl. 6, f. 79.

[6] *Cyprinus rohita*, Ham. Buch. Fish. Ganges, p. 301, pl. 36, f. 85.

[7] *Cyprinus cursa et gonius*, Ham. Buch. Fish. Ganges, pp. 290-292, pl. 4, f. 82.

102. The *Mahásaul*[1] of the polished dialect of Bengal, called Putitor in the vulgar dialect of Goálpárá, is the largest of the carp kind that we have, and is often found nine feet in length, and six feet is an usual size. The scales are exceedingly large, being like the hand, and at Dacca are often made into the cards with which people game. It is reckoned coarse food.

103. The *Tor*[2] of the Tistá does not grow above two feet in length, but its scales are as large in proportion as those of the last mentioned fish, and its colours are more splendid, almost equal in beauty those of the Rohit.

104. The *Angro*[3] of Goálpárá, is also a beautiful fish, about the size of a herring. It is marked on each side by a fine broad blackish-purple line.

105. The *Morul*[4] of Goálpárá scarcely differs from the former in anything but the colours; while, on the contrary, the two following have almost the same colours with the Morul, but differ very considerably in proportions.

106. The *Dhengro*[5] of Goálpárá, is a fish of four or five inches in length.

107. The *Jaoyáli*[6] of Goálpárá is still smaller.

108. The *Kálbasu*[7] of Dinájpur (No. 44), both here and in most parts of Bengal, is called by the same name. At Lakshmípur, it is also called Kálkuni.

109. The *Kátal*[8] of Dinájpur (No. 46), and of every other part of Bengal, is found here also, but in general is not of the best quality. This fish is never taken by a bait, for which the natives readily account by supposing that it eats by the nostrils, which are of the structure usual in carps.

[1] *Cyprinus putitora*, Ham. Buch. Fish. Ganges, p. 303.

[2] *Cyprinus tor*, Ham. Buch. Fish. Ganges, p. 305. "This fish I found in the Mahánandá river, where it grows to three or four feet in length." MS. drawings, No. 121.

[3] *Cyprinus angra*, Ham. Buch. Fish. Ganges, p. 331. MS. drawings, No. 118.

[4] *Cyprinus morala*, Ham. Buch Fish. Ganges, p. 331, pl. 22, f. 88.

[5] *Cyprinus dero*, Ham. Buch. Fish. Ganges, p. 277, pl. 22, f. 78.

[6] *Cyprinus joalius*, Ham. Buch. Fish. Ganges, p. 316, MS. figure, now missing, seen by M'Clelland.

[7] *Cyprinus calbasu*, Ham. Buch. Fish. Ganges, p. 297, pl. 2, f 83.

[8] *Cyprinus catla*, Ham. Buch. Fish. Ganges, p. 287, pl. 13, f. 81.

110. The *Darangi* of the Tistá is, in some places, called *Kuntá*.[1] It has a great affinity with the Curmuca[2] which is described in my account of Mysore, and with the following, being about the same size. and having nearly the same proportions and qualities.

111. The *Saran punthi*[3] of every part of Bengal, and of Dináj-pur (No. 43), is common in this District.

Why the name Punthi has been given, in common, to the last fish and to the eight following, I cannot say, because it is a large fish with rather dull colours, and all the others are very small, and all more or less marked with fine spots, and shine with the most beautiful glosses. The first five are in general of the colour of silver. The last three are more or less diaphanous, and are still more beautiful than the former.

112. This is commonly called *Punthi* without any addition, and is the prototype of the others. It is the *Saphari*[4] of the Sanskrit language.

113. The *Cholá punthi*[5] of Goálpárá, and Korabuti of Alípur, where it is one of the most common fishes, but it is probable that several of the other kinds are often sold under the same name.

114. The *Teri-punthi*[6] of Goálpárá.

115. The *Tit-punthi*[7] of Goálpárá and Calcutta. At the two places, these small fishes differ in their colours a little, but scarcely so much as to render it necessary to consider them as two species.

[1] *Cyprinus chaguno*, Ham Buch. Fish. Ganges, p. 295, The original MS. drawing is missing, but a copy exists, No. 39, Vol. 1., marked *C. chaguno*, and Dr Gunther observes (Pro. Zool. Soc. 1872, p. 877), that on the paper, "a portion of the specific name has been cut off in binding the drawings This name is *Cyprinus Runt*, a name which does not occur in Hamilton's Works, but which is evidently the same as *Kunta*."

[2] It is placed next to this species in the Fishes of the Ganges, p. 294, and it is stated, "this and the following species have a great resemblance to the *Cyprinus carrhosus* of Bloch." The term "Kántá," in reality signifying "a spine," or "thorn," with reference to the dorsal fin having a strong osseous ray or spine.

[3] *Cyprinus sarana*, Ham. Buch. Fish. Ganges, p. 307. MS. drawings possessed a figure in 1839, according to Dr M'Clelland, so probably copies are still in existence in Europe.

[4] *Cyprinus sophore*, Ham. Buch. Fish. Ganges, p. 310, pl. 19, f. 86.

[5] *Cyprinus chola*, Ham. Buch. Fish Ganges, p 312, MS. figure missing, reproduced M'Clelland, pl. 56, f. 3.

[6] *Cyprinus terio*, Ham. Buch. Fish. Ganges, p. 313, MS. drawings, No. 97 as *C. terripungta*.

[7] *Cyprinus tuto*. Ham. Buch. Fish. Ganges, p. 314, pl. 8, f 87

116. The *Kánchan-punthi*[1] of Goálpárá.

117. The *Geli-punthi*[2] of Goálpárá.

118. The *Phutuni-punthi*[3] of Goálpárá.

119. The *Kani-punthi*[4] of Goálpárá. This little fish which is about one and a-half inch in length, exceeds all the others in beauty. Its back and tail are red and diaphanous, through which the peritoneum and intestines shine like silver, and on each side there are some large black shining spots.

Allied to these three last in being diaphanous, are three other small fishes, which, however, want their splendid colours.

120. The *Ghugini*[5] of Goálpárá.

121. The *Mauyá*, *Molá*[6] or *Mauralá* of Goálpárá, is known by the latter name at Calcutta, and by that of Kankochi at Lakshmípur.

122. The *Ghilá-cháudá*[7] of Goálpárá, has, in fact, some affinity to the fishes (No. 22-24) that are called by the common name Chándá; but the position of the fins is quite different. It is mentioned in my account of Dinájpur (No. 38) under the name of Sangpuyi, but it is known in some parts of that District by the name of *Koti*; at Lakshmípur it is called *Bokri*.

The following Cyprini have bodies very little compressed, and resemble the Minnow or Veron of Lacepede.

123. The *Dorkiná* or *Dánkoná*[8] of Goálpárá is the *Bara-Dánikoná* of Calcutta, and very much resembles a Minnow, but is larger.

124. The *Sádá-bálitorá*[9] is about the size of the Minnow, but its colours are very different. It differs from the Bálitorá, No. 67, in wanting teeth.

[1] *Cyprinus conchonius*, Ham. Buch. Fish. Ganges, p. 317, and MS. drawings, No. 96, as *Cyprinus korikon*.

[2] *Cyprinus gelius*, Ham. Buch, Fish. Ganges, p. 320, and MS. drawings, No. 133, as *C. geli punti*.

[3] *Cyprinus phutunio*, Ham. Buch. Fish. Ganges, p. 319, MS. drawings, No. 129.

[4] *Cyprinus canius*, Ham. Buch. Fish. Ganges, p. 320, MS. drawings, No. 127, as *C. kani punti*.

[5] *Cyprinus guganio*, Ham. Buch. Fish. Ganges, p. 338, and MS. drawings, No. 101, as *C. gugani*.

[6] *Cyprinus mola*, Ham. Buch. Fish. Ganges, p. 334, pl. 38, f. 92.

[7] *Cyprinus coto*, Ham. Buch. Fish. Ganges, p. 339, pl. 39, f. 93.

[8] *Cyprinus daniconius*, Ham. Buch. Fish. Ganges, p. 327, pl. 15, f. 89.

[9] *Cyprinus sada*, Ham. Buch. Fish. Ganges, p. 344, MS. drawings, No. 106.

125. The *Lati*[1] of the Tistá is five or six inches long, but of a similar form.

126. The *Kuchiyá*[2] of Dinájpur (No. 47) is known here by the name of *Kánche.* It is a species of Unibranchaperture of Lacepéde.

The following table, showing the present population of the district, and the total fishing population, &c., is taken from the census report of 1872 :—

District.	Total population.	Male adults.	Percentage of adult males to the whole population	Total fishing population	Number of fishermen.	Number of fish-mongers.			Number of net-makers.
						Males.	Females	Total.	
Rangpur	2,149,972	703,602	32·7	162,447	5,332	10,297	639	10,936	7

[1] *Cyprinus latius*, Ham. Buch. Fish. Ganges, p. 345, MS. drawings, No. 102, as *C. lati.*

[2] *Unibranchapertura cuchia*, Ham. Buch. Fish. Ganges, p. 16.

FISH AND FISHERIES OF PURNIAH DISTRICT

NOTWITHSTANDING the large rivers and numerous marshes of this District, the very great number of fishermen and the great demand for fish, the markets in the north-west parts are very indifferently and scantily supplied. The fishermen in these parts of the District have still less art than those towards the east; and, as they man most of the boats employed in commerce, the number actually engaged in the fishery is but small, although, when not engaged as boatmen, they all fish. Towards the Ganges and Mahánandá, the supply is abundant.

A very few fish are dried in order to be exported to the mountaineers, by the same process as in Rangpur; but among the people of the District, this sort of fish is not in request; nor in most parts do they prepare the balls called Sidal, by pounding the fish with vegetables. This, however, is done towards the North and East, where there are Kochs, for the art seems to have originated with the people of that tribe. The people are not, however, select in their choice, a great part of the fish used being in a state of the most disgusting corruption. That is particularly the case with what is used at the capital, most of which is brought from a distance. The difference of species makes very little alteration in the value, a seer of fish selling for nearly the same price, of whatever kinds or sizes the fish may be.

With regard to the means used for catching fish, I have little to add to what I have said in the account of Dinájpur; but that in general, the methods are more imperfect, and that the fishermen can take very little fish, except what is almost left dry. Those on the Mahánandá, however, are much more expert than most of the others; but in my account of Dinájpur, I have said all that has been suggested on that subject. On the Ganges also, the fishermen seem to be expert; but most of the fisheries on that river belong to the District of Bhágalpur. I must refer the reader to my account of that District, given in previous pages. The Kusí is not very abundant in fish, and the fishermen are the most obstinate people with

whom it has ever been my misfortune to deal. In fact, the fishermen make very high wages, when employed to man boats or bring down timber, and this enables them to be very idle when they are at home, so that the fishing is only a kind of amusement. On this great river they have no nets, but such as are thrown from the shoulder, or a miserable kind of bag net. Most of the fish are taken as the river dries up, by putting screens across the smaller channels, until the water leaves them dry.

The farmers are very unskilful in catching fish, and chiefly procure them in ditches by making little banks across and throwing out the water. The fishermen, so far as I saw, have none of the complicated machines used in Dinájpur and Rangpur, and a great many have neither nets nor boats, but in place of the former, use screens made of reeds, and never go to fish except in shallow water. There are none of the Gánrárs, or people who fish with the harpoon; but some of the lower tribes of fishermen occasionally use a spear. Many of the natives fish with the rod for amusement. The rod and tackle are exceedingly coarse, and not at all fitted for showing dexterity in their use. The fisher never uses an artificial fly, nor does he drag his bait. It is suspended by a float, and he sits with the utmost patience, until a fish bites. He then drags out his prey by mere force, and, if it be small, makes it fly over his head, like our European boys catching minnows.

In most parts the right of fishing is annexed to the land, and is let to renters (Mustájírs), who sometimes employ men to catch the fish for wages, or for a share, and sometimes re-let them to the actual fishermen, giving them either an exclusive right to the use of a certain extent, or a right of frequenting a certain extent along with others. The nominal value of the fisheries is a trifle, most of the landlords pretending to give them to their servants as a reward for their trouble; but, as I have said, there is no knowing the amount of a Zamíndár's profit from the nominal rental. The leases of the fisheries are generally renewed annually, and at each renewal a Salámí or homage is paid, and without knowing the amount of this, we learn nothing. A great many of the actual fishermen pretend to give one-half of all they take to the renter, but he is in general defrauded. By far the greatest fishing, that of the Ganges, belongs to a lady, who resides at Rájmahal in Bhágalpur and many fishermen of this District are in her employ.

The number of fishermen was estimated to me at about 7000 houses, and it was said that in each house there might, on an average, be two able-bodied men, giving 14,000 fishermen; but as I have said, many are boatmen, and only fish when they cannot procure a voyage, and several also catch ducks, or have other avocations that interfere with their catching fish. It is probable, however, that each man, on an average, may catch fish to the value of eighteen rupees a year. They probably give at least to the value of one-third of the fish to the agents of the landlords. Some fish is exported. A little of this is dried, and is sent to Bhután or Nepál, but by far the greater part is sent to Murshidábád, without any care taken to preserve it, farther than by using a quick conveyance. The kinds sent are chiefly, the Rohu (No. 105), Mrigal (No. 104), and Chital (No. 76).

In the cold season some boats, of from 100 to 200 maunds burthen, are half filled with water, and great quantities of small fish are put into them, and sent living to Calcutta. The fish are so thick that they are just kept wet, but the water is frequently renewed. The kinds are the Singí (No. 38), Mauri (No. 37), and Kábai (No. 20), all small fishes very tenacious of life, and in much request with the natives, as supposed to possess restorative powers.

The wives of the fishermen sometimes retail the fruit of their husbands' toil, but in this District most of the fish are bought from the fishermen by wholesale, and retailed by people called Kunjrá and Pájárá, who do not belong to fishing tribes. Those which are sent to Murshidábád are bought by petty traders, who come from Bhagwángolá, and who have fast rowing boats.

The fishermen in general live very easily, those on the Mahánandá by the labour of their profession, and those in the other parts of the District by also acting as boatmen.

The following table shows the fishing population in 1872, as returned by the census of that year.

CENSUS OF 1872.

Name of District.	Total Population.	Total adult males.	Percentage of adult males to the entire population.	Total fishing population.	Number of fishermen.	Number of fishmongers.		
						Males.	Females	Total.
Purniah	1,714,795	548,569	32·0	87,364	8312	477	250	727

ESTIMATE OF HOW FAMILIES IN PURNIAH AND NEIGHBOURING DISTRICTS ARE FED. By Buchanan Hamilton, *circ.* A.D. 1810.

FAMILIES	Purniah. Population 2,904,380.	Shahabad. Population 1,419,520.	Rangpur. Population 2,735,000.	Gorakhpur, northern part Population 1,989,314.
That have as much fish as they please	$\frac{40}{100}$	From 120 to 150 times a-year. 215	228,200	From 120 to 150 times a-year. 22,210
That have fish only on market days	$\frac{28}{100}$	—	178,500	—
That have only what they can catch	$\frac{27}{100}$	—	130,300	From 30 to 60 times. 38,376
That reject fish, . . .	$\frac{1}{100}$	39,175	—	107,736
That have it daily in the cheap season only, and occasionally in the dear season, . . .	—	About 90 to 120 days a-year 41,518	—	From 30 to 90 times. 108,777

The population figures given above are those returned by Buchanan Hamilton.

With regard to the species of fish that are found in this District, not a great deal of new matter has offered, and I shall confine myself chiefly to giving a list of those of the Kusí, by which means I shall be able to give the Hindí names, at least such as are used in the dialect of Mithilá. When, therefore, no particular place is mentioned, it is to be understood that the fish is found in the Kusí near Náthpur. For the synonymes, and other particulars, I shall merely refer by the initials of the name of the District, and by the numbers, to the account given of the fishes of Dinájpur and Rangpur.

VARIETIES OF FISH—

1. *Phokchá*,[1] R. 1.
2. *Kárthawáleh Phokchá*.[2]
3. *Káriyá Phokchá*[3] are two small species of the *Tetrodon*, similar to the fish first mentioned.
4. *Rájvám*[4] is the eel common in Europe, the Muræna Anguilla

[1] *Tetrodon fluviatilis*, Ham. Buch. Fish. Ganges, p. 6, pl. 30, f. 1.

[2] *Tetrodon gularis*, Ham. Buch. Fish. Ganges, p. 10, with the name *kantha-waleh phoksha*.

[3] *Tetrodon cutcutia*. Ham. Buch. Fish. Ganges, p. 8, pl. 18, f. 3, MS. drawings as *T. kariya phoksa*.

[4] *Muræna anguilla*, Fish. Ganges, p. 22

of naturalists. It is found in marches near the Kusí, and as usual when found in dirty stagnant water, has very lurid colours, of various shades of green above, and of dirty yellow below. I am a good deal surprised at the fuss which Lacepede makes about this ugly animal, which has every appearance of a snake, and wants the beautiful colours with which most serpents glitter. The manners of the eel are as disgusting as its form. Whenever it can, it buries itself in putrid carcasses, or in the mud, in which it forms holes with great celerity. It is a very irritable animal, and, when angry, its head and neck swell, although not to such a degree as those of the hooded snake. All Hindus, except Bráhmans and Rájputs, eat this fish, which is not very common, and does not here attain a very great size.

5. The *Sŭsŭká Káuchal*[1] is a species of *Ophisuris*, and a much prettier eel than the one above mentioned. It is found in the Mahánandá, as well as near Calcutta. The Hindus on the banks of the former river eat it, but at the latter place it is rejected with disgust. Its name is derived from an imagination that it is born in the ear of the porpoise.

6. The *Găchchi*[2] (D. 4, R. 5) of the Kusí at Bholáhát is called Chhota Gochí.

7. *Vám*,[3] D. 2, R. 4.

8. The *Pátăhí* (D. 3, R. 4) of the Kusí, at Bholáhát is named *Pátál Gochí*.[4]

9. *Gullá*,[5] D. 5, R. 6.

10. *Kotrá*,[6] R. 9.

11. *Káriyá Kotrá*,[7] R. 7, D. 6.

12. *Lál Kotrá*,[8] R. 8.

13, 14. *Khesrá*,[9] R. 12. The same name is here given to the 11th fish of the Rangpur list, a very distinct species.

[1] *Ophisurus hyala*, Ham. Buch. Fish. Ganges, p. 20, pl. 5, f. 5.

[2] *Macrognathus pancalus*, Ham. Buch. Fish. Ganges, p. 30, pl. 17, f. 7.

[3] *Macrognathus armatus*, Fish. Ganges, p. 28.

[4] *Macrognathus aculeatus*, Fish. Ganges, p. 29.

[5] *Gobius guris*, Ham. Buch. Fish. Ganges, p. 51, pl. 33, f. 15.

[6] *Trichopodus cotra*, Ham. Buch. Fish. Ganges, p. 119, MS. drawings No. 40, as *T. cærulescens*.

[7] *Trichopodus colisa*, Ham. Buch. Fish. Ganges, p. 117, pl. 15, f. 40.

[8] *Trichopodus bejeus*, Ham. Buch. Fish. Ganges, p. 118.

[9] *Trichopodus latius*, Ham. Buch. Fish. Ganges, p. 120, MS. drawings No. 37, as *T. ruber*.

15. *Chengá*,[1] R. 13.

16. *Garai*,[2] R. 14, D. 8.

17. *Bhongrá*,[3] R. 17, D. 7.

18, 19. The *Dárhí*[4] includes two species, one is the 19th of the Rangpur list, the other nearly resembles it.

20 *Kăbai*,[5] R. 20, D. 10.

21. *Dhálí*,[6] R. 21, D. 14.

22. *Chándá*,[7] R. 26.

23. *Sŭhí Chándá*,[8] R. 22.

24, 25. The *Kesírá chándá*[9] in Bholáhát is a name applied to both the 24th and 25th fishes of the Rangpur list.

26. The *Táká chándá*[10] of the same place is the 12th fish of the Dinájpur list.

27. *Vághí*,[11] R. 27, D. 49.

28. *Látá*,[12] R. 30.

29. *Lálká Látá*,[13] D. 15, R. 29.

30. *Kŭkŭrá*,[14] R. 34.

31. *Chhotá Kŭkŭrá*,[15] a small fish very much resembling the one immediately preceding.

32. *Khărŭká*,[16] another small fish not differing greatly from the two last.

33. A small fish, not differing much from the last, was brought to me by two names, *Sávăn Khărká*[17] and *Páthăr Chătá*.

[1] *Ophiocephalus gachua*, Ham. Buch. Fish. Ganges, p. 68, pl. 21, f. 21.

[2] *Ophiocephalus lata*, Ham. Buch. Fish. Ganges, p. 63, pl. 34, f. 18.

[3] *Ophiocephalus marulius*, Ham. Buch. Fish. Ganges, p. 65, pl. 22, f. 19.

[4] *Labrus badis*, Ham. Buch. Fish. Ganges, p. 70, pl. 25, f. 23.

[5] *Colus cobojius*, Ham. Buch. Fish. Ganges, p. 98, pl. 13, f. 33.

[6] *Colus nandus*, Ham. Buch. Fish. Ganges, p. 96, pl. 30, f. 32.

[7] *Chanda lala*, Ham. Buch. Fish. Ganges, p. 114, pl. 21, f. 39.

[8] *Chanda nama*, Ham. Buch. Fish. Ganges, p. 109, pl. 39, f. 37.

[9] *Chanda phula* and *bogoda*, Ham. Buch. Fish. Ganges, p. 111, MS. drawings Nos. 1 and 3.

[10] *Chanda ranga*, Ham. Buch. Fish. Ganges, p. 113.

[11] *Cobitis dario*, Ham. Buch. Fish. Ganges, p. 354, pl. 29, f. 95.

[12] *Cobitis guntea*, Ham. Buch. Fish. Ganges, p. 353, MS. drawings No. 58.

[13] *Cobitis pangia*, Ham. Buch. Fish. Ganges, p. 355, MS. drawings No. 51.

[14] *Cobitis gongota*, Ham. Buch. Fish. Ganges, p. 351, MS. drawings No. 55.

[15] *Cobitis cucura*, Ham. Buch. Fish. Ganges, p. 352, MS. drawings No. 57, as *C. chota kukura*.

[16] *Cobitis corica*, Ham Buch. Fish. Ganges, p. 359, MS. drawings No. 52, *C. khorika*.

[17] *Cobitis savona*, Ham. Buch. Fish. Ganges, p. 357, MS. drawings No. 54, as *Cobitis savonkhurika*.

34, 35. The *Bălgárá*[1] includes two species.

36. *Pemá*,[2] R. 65.

37. *Măngŭrá*,[3] R. 41, D. 16. In the south part of the District it is called Maurí.

38. *Sĭngí*,[4] R. 40, D. 17.

39. *Boyálí*,[5] R. 39, D. 19.

40. The 35th fish[6] of the Dinájpur list was brought to me by the fishermen on the Kusí by two names, *Báchoyá* and *Sásŭyá*.

41, 42. *Chechrá*[7] D. No. 18. Under the same name is also included a kindred species, which grows to about a foot in length, and is one of the best fishes of the Kusí.

43. *Chhotkí Checchrá*,[8] R. 38.

44. *Lálmŭkhá Chechrá*,[9] R. 37.

45. The 42nd fish of the Rangpur list, in the Kusí is called *Angchácheyá*,[10] and *Sătarbĭrí*, at Bholáhát it was called *Bánspátá*, or the bamboo-leaf, a name given by the Bengalis to several fish, that have a very small resemblance to each other, or to the object from which the name is derived.

46. The *Mángoí*[11] is a small very ugly Pimelode.

47. *Kátlá*,[12] R. 59, D. 26. This must be carefully distinguished from the Kátal of the Bengalis, at Calcutta, usually called Kátlá, which is a species of Cyprin, very common in the Ganges and Mahánandá, but scarcely ever found in the Kusí.

[1] *Cobitis balgara*, Ham. Buch. Fish. Ganges, p. 356, MS. drawings No. 56, *C. balgara*.

[2] *Calliomorus chaca*, Ham. Buch. Fish. Ganges, p. 133, pl. 28, f. 43.

[3] *Macropteronotus magur*, Ham. Buch. Fish. Ganges, p. 146, pl. 26, f. 45.

[4] *Silurus singio*. Ham. Buch. Fish. Ganges, p. 147, pl. 37, f. 46.

[5] *Silurus boalis*, Ham. Buch. Fish. Ganges, p. 154, pl. 29, f. 49.

[6] *Clupanodon chapra*, Ham. Buch. Fish. Ganges, p. 248, the drawing missing in Calcutta is reproduced in the illustration of Indian Zoology.

[7] *Silurus pabda*, Ham. Buch. Fish. Ganges, p. 150, pl. 35, f. 47.

[8] *Silurus canio*, Ham. Buch. Fish. Ganges, p. 151.

[9] *Silurus pabo*, Ham. Buch. Fish. Ganges, p. 153, pl. 22, f. 48.

[10] *Malapterurus coila*, Ham. Buch. Fish. Ganges, p. 158, and MS. drawings No. 7, as *Malopterure kazali*.

[11] *Pimelodus mangois*, Ham. Buch. Fish. Ganges, p. 199, and MS. drawings No. 9, as *P. manggoi*.

[12] *Pimelodus vacha*, Ham. Buch. Fish. Ganges, p. 196, pl. 19, f. 64.

48. The *Chhotká Váchoyá*[1] of the Kusí, at Bholáhát is called Mŭrĭváchá, and has a great resemblance in form to the last mentioned fish, but it never grows to a large size, and is not so ugly, nor are its colours so lurid.

49. *Pátásĭ*,[2] R. 55, D. 27.

50. The *Thŏnka Pátásĭ*[3] (R. 51, D. 53) of the Kusí, at Bholáhát is called *Khămăĭn*.

51. The *Pángsá*[4] of the Kusí was by all my people considered as the same with the Pángás of Bengal (R. 57). Yet the only specimen that I was able to procure had no abdominal fins. If this was not an accidental circumstance, the Pángsá cannot be arranged with the Pimelodes, nor even among the same class of fishes, which shows the inconvenience of arbitrary systems, such as that used by Lacepéde.

52. *Arĭyá*[5] R. 60, D. 23.

53. *Vághárĭr*,[6] R. 61, D. 24.

54. The *Menădá*[7] of the Kusí on the Ganges and Mahánandá is called *Gágăr* or *Tel Gágrá*, and is the prototype of a large class of fishes. It is a small lurid Pimelode.

55. *Kosiyá Tyángrá*,[8] or Tengárá, R. 49, D. 51.

56. *Tyángrá*,[9] or *Tengărá*, or Hárá Tengărá, R. 43, D. 28.

57. *Bájhá*,[10] R. 44, D. 50.

58. *Lárá Tengărá*,[11] R. 45.

59. *Măhŭjăr*,[12] R. 53.

60. *Telchĭttá*[13] is a small lurid Pimelode, which, like the following,

[1] *Pimelodus murius*, Ham. Buch. Fish. Ganges, p. 195, and MS. drawings No. 14.

[2] *Pimelodus anguis*, Ham. Buch. Fish. Ganges, p. 180, pl. 29, f. 59.

[3] *Pimelodus chandramara*, Ham. Buch. Fish. Ganges, p. 162, MS. drawings No. 13, as *P. changdramara*.

[4] *Pimelodus pangasius*, Ham. Buch. Fish. Ganges, p. 163, pl. 33, fig. 52.

[5] *Pimelodus arius*, Ham. Buch. Fish. Ganges, p. 170.

[6] *Pimelodus bagarius*, Ham. Buch. Fish. Ganges, p. 186, pl. 7, f. 62.

[7] *Pimelodus menoda*, Ham. Buch. Fish. Ganges, p. 203, pl. 1, f. 72, in MS. drawings, No. 18, as *P. telgagra* and *menoda*.

[8] *Pimelodus cavasius*, Ham. Buch. Fish. Ganges, p. 203, pl. 11, f. 67.

[9] *Pimelodus carcio*, Ham. Buch. Fish. Ganges, p. 181, pl. 3, f. 61, erroneously termed *P. tengara*.

[10] *Pimelodus tengara*, Ham. Buch. Fish. Ganges, p. 183, pl. 23, f. 60, erroneously marked *P. batasius*.

[11] *Pimelodus batasio*, Ham. Buch. Fish. Ganges, p. 179, MS. drawings No. 11 as *P. batasi*.

[12] *Pimelodus tengana*, Ham. Buch. Fish Ganges, p. 176, pl. 39, f. 58.

[13] *Pimelodus telchitta*, Ham. Buch. Fish. Ganges, p. 185, MS. drawings No. 10, a *P. nibriundus*.

has the character of the Hypostomes of Lacepéde; but I can see no sufficient grounds for separating these from the Pimelodes.

61. *Năngrá*[1] a small ugly fish.

62. *Pădná*,[2] R. 46, D. 52.

63. *Năngrá*, a small fish nearly related to the above.

64. *Gŭthalyángrá*, R. 48.

65. *Chámár*, a small Pimelode.

66. *Hárá*[3] an exceedingly ugly small Pimelode.

67. *Nángărá*,[4] R. 64.

68. The small fish, number 30[5] of the Dinájpur list, was brought to me from the Kusí by several names, Páthar Chătá also given to a fish already mentioned (No. 33), Găngájălí and Ghátponá.

69. *Dhongá*,[6] R. 66, D. 29.

70, 71. The *Tĭtŭyá*[7] of the Kusí includes two species, Nos. 67, and 68 of the Rangpur list.

72. *Khărá*,[8] R. 69.

73. *Hundărá*,[9] R. 70, D. 31. At Bholáhát it is called Mŭráĭl.

74. The *Dhánĭ*,[10] of Bholáhát is a very small species of Atherina, of which immense numbers are found in the lower parts of the Mahánandá.

75. *Gohătí*,[11] R. 73, D. 33.

76. *Bhŭní*,[12] R. 74, D. 34.

77. The fishes of the Kusí differ in nothing more from those of the rivers towards the east, than in containing few species that have an affinity to the herring. In fact no species that has teeth, is found

[1] *Pimelodus nangra*, Ham. Buch. Fish. Ganges, p. 193, pl. 11, f. 63

[2] *Pimelodus rama*, Ham. Buch. Fish. Ganges, p. 176, pl. 3, f. 35.

[3] *Pimelodus hara*, Ham. Buch. Fish. Ganges, p. 198, MS. drawings No. 12.

[4] *Sisor rabdophorus*, Ham. Buch. Fish. Ganges, p. 208, and MS. drawings No. 8, as *Hypostomus? sisor.*

[5] *Esox panchax*, Ham. Buch. Fish. Ganges, p. 211, pl. 3, f. 69.

[6] *Esox cancila*, Ham. Buch. Fish. Ganges, p. 213, pl. 27, f. 70.

[7] *Cyprinus balitora and sucatio*, Ham. Buch. Fish. Ganges, pp. 343, 347, and MS. drawings, Nos. 44 and 45.

[8] *Mugil cascasia*, Ham. Buch. Fish. Ganges, p. 217, MS. drawings No. 68.

[9] *Mugil corsula*, Ham. Buch. Fish. Ganges, p. 221, pl. 9, f. 97.

[10] *Atherina danius*, Ham. Buch. Fish. Ganges, p. 222, MS. drawings No. 91, *A. dhani.*

[11] *Mystus kapirat*, Ham. Buch. Fish. Ganges, p. 235.

[12] *Mystus chitala*, Ham. Buch. Fish. Ganges, p. 236, MS. drawings, missing figure reproduced in illustration Indian Zoology.

in this river, but in the Mahánandá the kind called there Phánsá[1] (R. 71), is very common.

78. Of the fishes related to the herring, which have no teeth, *Clupanodon*, the only one commonly found is a small fish nearly related to the 78th of the Rangpur list, and to the 35th of Dinájpur. In the Mahánandá it is called *Bără-Khăyrá.*

79. The *Hĭlsá*[2] (R. 76, D. 57) sometimes, but very rarely, straggles into the Kusí, and never in large shoals; but it is very numerous in the Ganges and lower part of the Mahánandá, into which it penetrates as far as Krishnaganj.

80, 81. In the last mentioned river, two species, the 77th and 78th of the Rangpur list, are called by the common name *Kărtí.*[3]

82. In the Mahánandá, the 79th fish of the same list is called *Hálĭyád.*[4]

83. There, also, I found a very singular small fish named *Suvarna Khărĭká,*[5] which differs from the above fishes, in having two fins under the tail, of which I have seen no other instance.

84. *Máli,*[6] R. 83.

85. The *Káchki*[7] is a small fish, a good deal resembling the last, which is found in the Mahánandá. It can be with difficulty considered as a Cyprin, but is nearer that class of fishes than any other.

86. The *Kongrí* is also a small fish that has only a distant resemblance to the Cyprins.

87. The 80th fish of the Rangpur list on the Kusí is named *Bĭlrá,*[8] on the Mahánandá, *Dhor Chelá.*

88. *Guttá,*[9] R. 122, D. 38.

89. *Málhí,*[10] R. 81.

[1] *Clupea telara*, Ham. Buch. Fish. Ganges, p. 241, pl. 2, f. 72.

[2] *Clupanodon ilisha*, Ham. Buch. Fish. Ganges, p. 243, probably not pl. 19, f. 73.

[3] *Clupanodon manmina* and *cortius*, Ham. Buch. Fish. Ganges, pp. 247, 249.

[4] *Clupanodon motius*, Ham. Buch. Fish. Ganges, p. 251, MS. drawings, No. 88, *C. moti.*

[5] *Corica soborna*, Ham. Buch. Fish. Ganges, p. 253, and MS. drawings, No. 87, as *Clupanodon? suborno khorika.*

[6] *Cyprinus laubuca*, Ham. Buch. Fish. Ganges, p. 260, MS. drawings, No. 139.

[7] *Cyprinus cachius*, Ham. Buch. Fish. Ganges, p. 258, and MS. drawings, No. 145.

[8] *Cyprinus gora*, Ham. Buch. Fish. Ganges, p. 263, and MS. drawings No. 146.

[9] *Cyprinus cotio*, Ham. Buch. Fish. Ganges, p. 339, pl. 39, f. 93.

[10] *Cyprinus bacaila*, Ham. Buch. Fish. Ganges, p. 265, pl. 8, f. 76.

90. *Podkí*,[1] R. 91.

91. *Jáyá*[2] is a small compressed Cyprin, with its back fin placed near the tail.

92. The small fish (No. 86) of the Rangpur list, on the Kusí is called *Solí*,[3] on the Mahánandá, *Pehelí*.

93. The *Mărur*[4] of the Kusí is one of the most delicate small fishes of the rivers in Bengal, and its taste and size have a considerable resemblance to those of the Smelt. It is a Cyprin.

94. The fish of the Rangpur list (No. 104) on the Kusí is called *Kărsá*,[5] on the Mahánandá, *Mochhná*.

95. The *Phákrá*[6] is a small Cyprin, and like the two following, has dark bars transversing its sides.

96. *Pĭhŭyá*,[7] R. 88, D. 58.

97. *Tĭlŭyá*,[8] R. 89.

98. *Tĭlei*[9] is a small Cyprin, which, with the following, has its sides spotted somewhat like those of a trout.

99. The *Gohá*[10] grows to the size of a herring, and is a pretty good fish.

100. The 93d fish of the Rangpur list on the Kusí, is called *Málangá*,[11] and on the Mahánandá, *Eleng*.

101. The 95th fish of the Rangpur list, the *Rebá*[12] of the banks of the Kusí, and the Ráĭkhárí of the Mahánandá. This fish seems to suffer considerable alterations in colour from the nature of the water in which it lives. In marshes and small channels over-grown with weeds, its back is green with a gloss of gold, while in clear water, the whole is white and shines like silver.

[1] *Cyprinus devario*, Ham. Buch. Fish. Ganges, p. 341, pl. 6, f. 94.

[2] *Cyprinus jaya*, Ham. Buch. Fish. Ganges, p. 333, and MS. drawings No. 135.

[3] MS. drawing No. 104.

[4] *Cyprinus morar*, Ham. Buch. Fish. Ganges, p. 264, pl. 31, f. 75.

[5] *Cyprinus angra*, Ham. Buch. Fish. Ganges, p. 331, MS. drawings No. 118.

[6] *Cyprinus shacra*, Ham. Buch. Fish. Ganges, p. 271, MS. drawings No. 137.

[7] *Cyprinus barila* and *chedro*, Ham. Buch. Fish. Ganges, pp. 267, 268, and MS. drawings No. 134.

[8] *Cyprinus cocsa*, Ham. Buch. Fish. Ganges, p. 272, pl. 3, f. 77.

[9] *Cyprinus tileo*, Ham. Buch. Fish. Ganges, p. 276, MS. drawings No. 125, *C. tilei*.

[10] *Cyprinus goha*, Ham. Buch. Fish. Ganges, p. 275, MS. drawings No. 126.

[11] *Cyprinus elanga*, Ham. Buch. Fish. Ganges, p. 281, MS. drawings No. 103.

[12] *Cyprinus reba*, Ham. Buch. Fish. Ganges, p. 280, MS. drawings No. 117 *C. bangana*.

102. Pángŭsĭyá[1] is a small fish, nearly resembling the two following kinds, but does not grow larger than a Smelt.

103. *Bhángáná*,[2] R. 98.

104. *Mŭrká*,[3] D. 62, R. 99.

105. *Rohu*,[4] D. 45, R. 100.

106. The *Nándĭn*[5] of the lakes or marshes of Gaur, is a very fine large well flavoured fish, like a Carp. I have seen it nowhere else in India.

107. *Bŭsráhá*,[6] R. 108, D. 44.

108. The *Kŭrsá*[7] is a beautiful striped large Cyprin, very like that mentioned in the Rangpur list, 101, but its scales are much smaller. It is full of small bones, and is poor eating.

109. Under the name *Sáhárá*, there was also brought to me another very fine large Cyprin, which name, however, was also given to the following.

110. The 103d fish of the Rangpur list on the Kusí is called *Tŭrĭyá* or *Sáhárá*,[8] as I have just now mentioned.

111. The *Másál*[9] of the Kusí is a very large fish, which many people think still better than the Rohu, and compare to the salmon. I cannot say that I could perceive any resemblance. It does not grow to such an immense size as the Mahásaul (R. 102) of the Brahmaputra, but has very large scales, and has a great affinity to that fish, and still more to the one last mentioned.

112. *Gárhán*, R. 110.[10]

113. The *Kháng rhí* of the Kusí is a fine large Cyprin, but the following is also called by this name.

114. The 111th fish of the Rangpur list (D. 43) on the Kusí was

[1] *Cyprinus pangusia*, Ham. Buch. Fish. Ganges, p. 285, MS. drawings No. 116, as *C. pangusiya*.

[2] *Cyprinus boga*, Ham. Buch. Fish. Ganges, p. 286, pl. 28, f. 80.

[3] *Cyprinus mrigala*, Ham. Buch. Fish. Ganges, p. 279, pl. 6, f. 79.

[4] *Cyprinus rohita*, Ham. Buch. Fish. Ganges, p. 301, pl. 36, f. 85.

[5] *Cyprinus nandina*, Ham. Buch. Fish. Ganges, p. 300, pl. 8, f. 84.

[6] *Cyprinus calbasu*, Ham. Buch. Fish. Ganges, p. 297, pl. 2, f. 83.

[7] *Cyprinus cursa*, Ham. Buch. Fish. Ganges, p. 290.

[8] *Cyprinus tor*, Ham. Buch. Fish. Ganges, p. 305, MS. drawings No. 121.

[9] *Cyprinus mosal*, Ham. Buch. Fish. Ganges, p. 306, MS. drawings No. 122.

[10] *Cyprinus chagunio*, Ham. Buch. Fish. Ganges, p. 295, MS. drawing (copy), vol. i. No. 39, *C. kunta*.

by some called *Dárhí*,[1] but others again called it *Khángrhí*, which, however, was probably a mistake.

115. The *Koswáti*[2] strongly resembles the Pŭnthis, mentioned below, but has no spots

116. The 112th fish of the Rangpur list is here also commonly considered as the prototype of all the Pŭnthis, and is usually called by that name alone; but the specific appellation *Dŭdhuyá*[3] is often prefixed.

117. The name *Kŭmrhí*[4] was often given to the 113th fish of the Rangpur list, which, however, from the redness of its fins, is often called *Lálká Pŭnthi*

118. The name *Chángyĭ*[5] was given to a small fish of the same list (115), but at times it was also called *Kŭmrĭ-Pŭnthi.*

119. The name *Khŭdĭ* or *Khŭdhĭ*[6] was also given to another similar fish (R. 116), but it was also occasionally called Chángyĭ.

120. The same name *Khŭdi*, without any addition, is also given to a small Cyprin, having one black spot on each side, and not being semidiaphanous like the Khŭdis mentioned below.

121. *Chhotká Khŭdi*,[7] R. 118.

122. The 117th fish of the Rangpur list on the Kusí was sometimes called *Bhú*,[8] and sometimes *Khŭdi.*

123. *Lálká Bhotĭ*,[9] R. 119.

124. *Márá*,[10] R. 120.

125. The same name *Márá*[11] is also given to another small fish, R. 121.

[1] *Cyprinus sarana*, Ham. Buch. Fish. Ganges, p. 307, MS. drawings missing in Calcutta.

[2] *Cyprinus cosuatis*, Ham. Buch. Fish. Ganges, p. 338, MS. drawings No. 132, as *C. koswati.*

[3] *Cyprinus sophore*, Ham. Buch. Fish. Ganges, p. 310, pl. 19, f. 86.

[4] *Cyprinus chola*, Ham. Buch. Fish. Ganges, p. 312, MS. figure reproduced M'Clelland, pl. 56, f. 3.

[5] *Cyprinus ticto*, Ham. Buch. Fish. Ganges, p. 314, pl. 8, f. 87.

[6] *Cyprinus conchonius*, Ham. Buch. Fish. Ganges, p. 317, MS. drawings No. 96, as *C. korikon.*

[7] *Cyprinus phutunio*, Ham. Buch. Fish. Ganges, p. 319, MS. drawings No. 129.

[8] *Cyprinus gelius*, Ham. Buch. Fish. Ganges, p. 320, MS. drawings No. 133, *C. geli-pungti.*

[9] *Cyprinus canius*, Ham. Buch. Fish. Ganges, p. 320, MS. drawings No. 127, as *C. kani pungti.*

[10] *Cyprinus guganio*, Ham. Buch. Fish. Ganges, p. 338, MS. drawings, No. 101.

[11] *Cyprinus mola*, Ham. Buch. Fish. Ganges, p. 334, pl. 38, f. 92.

126. A small fish like a minnow (Cyprinus Phoxinus) on the Kusí is sometimes named the *Dyángrá*,[1] and sometimes the *Anjaná*. There are two other Dyángrás (No. 127 and 132), but the latter has no great resemblance to this or to the following.

127. The *Kosíyá Dengrá*,[2] or *Dyángrá*, is another pretty little fish like a minnow, but has a long beard. In Dinájpur (39) it is named Dangriká, at Calcutta it is named Dháná or Dánikoná.

128. The *Jongjá*[3] of the Kusí very much resembles the last.

129. The *Rirhi Jongjá*[4] of the Kusí is one of the most beautiful little fishes that I have ever seen, being ornamented with fine longitudinal lines of purple and yellow.

130. *Kărsá*,[5] R. 104.

131. The *Páugsí*[6] of the Kusí is a small fish nearly resembling 105, 106, and 107 of the Rangpur list.

132. A good deal resembling these also is the third kind of *Dyángrá*,[7] mentioned above. It is also called *Konghări*, and is of little value.

133. *Desări*,[8] R. 124.

134. The *Anhai*[9] of the Kusí is a species of Synbranche totally without fin, and as like a snake as possible. It is not, however, a very ugly eel. In the vicinity of Lakshmípur it is called Kuchiyá, and is supposed by the natives to kill cattle by its bite; but this is probably a mistake, as they also suppose that its bite is not fatal to man. It is not found more than two feet in length.

[1] *Cyprinus anjana*, Ham. Buch. Fish. Ganges, p. 328, and MS. drawings No. 136, as *Cyprinus dyangra anjana*.

[2] *Cyprinus daurica*, Ham. Buch. Fish. Ganges, p. 325, pl. 16, f. 88.

[3] *Cyprinus jogia*, Ham. Buch. Fish. Ganges, p. 326, MS. drawings No. 141.

[4] *Cyprinus rerio*, Ham. Buch. Fish. Ganges, p. 323, and MS. drawings No. 144.

[5] *Cyprinus angra*, Ham. Buch. Fish. Ganges, p. 331, MS. drawings No. 118.

[6] *Cyprinus pausio*, Ham. Buch. Fish. Ganges, p. 317, MS. figure reproduced M'Clelland Indian Cyprinidæ, pl. 42, f. 4.

[7] *Cyprinus gohama*, Ham. Buch. Fish. Ganges, p. 346, MS. drawings No. 107, as *C. dyangra gohama*.

[8] *Cyprinus sada*, Ham. Buch. Fish. Ganges, p. 344, MS. drawings No. 106.

[9] *Unibranchapertura cuchia*. Ham. Buch. Fish. Ganges, p. 16

FISH AND FISHERIES OF BHAGALPUR DISTRICT.

NEAR the Ganges, and in the larger of its branches on the north side, tortoises are very numerous. They are caught by the common fishermen and are saleable; but except among the lower tribes are in little request. Some are sent from Rájmahal to Murshidábad, and to the mountaineers. At Monghir there are reckoned seven kinds:—1. Singiyá, which is said to grow to between 5 and 6 feet in length. 2. Katáhá, which grows to about 2 feet in length. 3. Dhongr grows to about a cubit in length. 4. Sŭtlí is about 7 or 8 inches long. 5. Bhĭtáhá is about the same size. 6. Sĭndŭrĭyá is about 4 or 5 inches long. 7. Hărhá is about the same size.

All these tortoises lay their eggs in the sand, digging a hole for the purpose, and covering them with sand. The season is from about the 1st of March to the middle of April. On other occasions, the whole continue always in the river, except the Káthá, which occasionally during the afternoon basks on the shore. They are supposed to feed chiefly on fish; but they are also thought to eat shell fish, the reed called Kosălá, the roots of which are inundated, and mud. Their eating the Kosălá appears to me doubtful; and what the natives mean by eating mud must have arisen from their having seen the animals searching among the mud for worms, snails, or such like animals.

Lizards are not in request. Crocodiles, both of the Ghărĭyál and Boch kinds, are numerous in the Ganges, and still more so in the Tiljugá. They are occasionally caught in the fishermen's nets, but are not intentionally molested, except on the north side of the Ganges, where the low tribe Musăhăr pursue them with spikes, and extract the oil. The Ghărĭyál, when caught, is eaten by the fishermen, as well as the Musáhár, but by no others. The Boch is rejected by all. Some invalids, whom it was attempted to settle on

the banks of the Tiljugá, assigned the number of crocodiles as a reason for having deserted their lands; but I did not hear that in the whole District these animals had ever destroyed man or beast. I have, however. heard of the Boch having bitten people very severely. In one tank I heard of their being tamed to a certain degree.

In the interior of the country south of the Ganges, fish are very scarce; the rivers for a great part of the year are almost dry, and there are few marshes, ponds, or lakes. In the rainy season, however, a few are generated, and are mostly caught by the farmers as the waters dry up. Near the Ganges, again, and especially near the Tiljugá Ghagrí, on the north side of the great river, there is great abundance of fish; but during the floods, owing to the want of skill in the fishermen, the supply is everywhere scanty; and at Bhágalpur, owing probably to some defect in the police, the scarcity prevails in all seasons; while at Monghir and Rájmahal, not more favourably situated, the supply during the dry season is uncommonly copious, and the quality tolerable.

Some fish are dried and sent to the interior and to the adjacent hilly parts of the Bírbhúm District. Near the Ganges this kind of food is not in request, nor do the people there prepare the balls called Sidal, which I have formerly mentioned. A large proportion of the fish used is far advanced in putrescence before eaten. Rohú, Kátlá, and Mrígál, being sent to Murshidábád in considerable quantity, sell about one-fourth dearer than the other kinds. In the dry season these valuable species sell at Monghir for from $2\frac{1}{2}$ to 3 pice a ser of 84 S. W. (about $2\frac{1}{4}$ pound), 64 pice being equal to a rupee.

There seems to be an uncommon alarm on the subject of the fisheries, so that I could procure no satisfactory account either of the number of men employed, of the nature of the tenures, of the means used, or even of the kinds caught. It was with great difficulty that I could induce two men to enter my service in order to bring me the different kinds, and they made so little exertion, and spoke so confusedly on the subject, that my list is exceedingly incomplete. The aversion shown by the owners and managers of the fisheries proceeds, I suspect, either from deficiencies of title or consciousness of fraud.

A great many of the fishermen employed on the Ganges belong to the Purniah District. When there, I was led to suppose that the

fishermen on that river were as expert as on the Mahánandá, but here this is altogether denied, and it is alleged that there are very few indeed who can take fish in the stream of the great river, and these mostly strangers. It is said that even the stream of the Tiljugá or Ghágrí, in its most reduced state, is unfit for the fishermen of this District, and that they are only successful in jhils or shallow lakes, and in what is called Kol and Dámas—that is, branches of rivers, in which during the dry season the communication with the stream is cut off at one, or at both ends. In the former case a net or screen stops the passage, and thus the fish are in a great measure caught as they are left dry, or, at least, when the assistance of a boat is not required in surrounding them with nets or screens (Jánghá). I am exceedingly doubtful concerning the reports which I heard on this subject, but an account of the nets used at Monghir will show that the fishermen are not so ignorant as they pretend.

Some of the Banpar Gonrhís at Monghir are said to strike large fish with the spear (Duktí), which is chiefly done in the floods. Some Keuts called Dubárí, or divers, are said to pursue fish under water with a spear, and I was gravely assured both at Surjyagarh and Monghir, that these men could continue under water a Hindí hour (twenty-four minutes); but two men that I tried at Monghir did not complete one minute, although one of them brought up a prawn. In some small rivers which have a supply from the hills, as the waters fall in the cold season, I saw in use weirs somewhat like those employed in the small rivers of the eastern parts of the Rangpur District.

A great portion of the fisheries has been separated from the property of the land by which they are surrounded; and even where the landlord has the right to the fisheries situated within his estate, the tax on the two properties is kept distinct. The greatest fishery, that at Rájmahal, mentioned in the account of Purniah as belonging to a lady, now belongs to Government. The owner having fallen into arrears, the estate was put up to sale, and no one offering, the Collector took it as usual. It has been since farmed to a Musalmán, who, it is said, pays only Rs. 1001 a-year, and who, it is pretended, loses by his bargain; but how this should be the case, seems difficult to be understood. Some few privileged fishermen have a right to fish in certain places for a certain small sum (Rs. 3 or 4) annually; but, if they go to any other place, as is usually the case,

they give a share, and by far the greater part of the fish is caught by those who give the renter or his agents half of all that they take, and the quantity taken in this fishery must be exceedingly great. Another great fishery in the same vicinity, but farther down, is called Dihi-Mirzápur, and includes what is called the Gangápanth, or the fishery on the Ganges with all its creeks and branches. On the small Bhágirathí it extends from Jangípur to Mohanganj, about nine kos; and, on the great river, it extends from Rádhánagar to Kándrá Gobindpur, about fourteen kos. Five hundred families have leases in perpetuity to use this fishery, but most of them reside in Purniah, Dinájpur, and Nátor, and they seem in some measure to be *adscripti aquis*, as it is alleged that, were they to remove even to Dacca, they would still continue liable for the rent. For each family, this varies from a-half to three rupees a-year, not according to its present strength, but according to its state, when the lease was granted. These people have the exclusive privilege of using the fishery of the Gangápanth, wherever the stream runs, but this is chiefly used in the rainy season, and in the dry, the fish are mostly caught in the branches and creeks (Kol or Dámas), that are stagnant, and the privileged fishermen, if they fish there, must give one half of all they take to the renter of the fishery, and he may there employ as many other people as he pleases. The 500 privileged families have 400 boats, and cannot well contain less than 1000 able-bodied men. The rent, according to some, is Rs. 900; according to others, Rs. 1100, and for the expense of collection (Saranjamí) the renter is allowed a deduction of Rs. 125. Similar customs exist on most of the other fisheries, and, as in Purniah, the nominal profit arising to the owners from them is a mere trifle; but, as these fisheries are here also in general farmed, there is no knowing their real value, even if we had access to see the books of the estate, for the renter either pays a premium (Salámí) for his lease, or receives it at a trifle as a reward for his services.

The number of fishermen stated to belong to this District was 3800 or 3900, but many of these are employed part of their time in gathering tamarisks for fuel, in harvest, and in working the boats which belong to the District; but all the people employed in these are not natives; and a great many people, even of those who have a right to fish for a fixed sum, are employed in the fisheries of this District, but reside in Purniah, Dinájpur, Nátor, and Murshidábád. The number actually employed may therefore be seven thousand; and, allowing

that each fishes eight months in the year, and catches five rupees worth of fish monthly, the total value will be 280,000 rupees, of which the owners of the fisheries may be able to secure a third part. No fish, so far as I heard, is sent to Calcutta. The sales are managed in Purniah.

The fishermen seem to live much as in that District. It is said, that during the fishing season, they can clear from two to six rupees a month, that is on an average four rupees, and the people, whom I employed merely to buy such fish as I wanted, complained of four rupees a month as being hard wages.

POPULATION AND PROPORTION OF FISHING CLASSES, ACCORDING TO THE CENSUS OF 1872.

Name of District.	Total population	Total adult males.	Percentage of adult males to the whole population.	Total fishing population.	Number of fishermen.	Number of fishmongers		
						Males	Females	Total
Bhágalpur	1,826,290	565,131	30·9	118,606	3051	757	82	839

ESTIMATE AS TO HOW FAMILIES IN THE BHAGALPUR DISTRICT ARE FED.

FAMILIES	Kotwálí	Ratnagaṇj	Kodwár.	Lokmanpur.	Gogrí.	Káṅgwargaṇj	Monghir.	Sújyágárh.	Mallépur.	Tárápur.	Bánká.	Faizullágaṇj	Paintí.	Rájmáhál	Phúlkipur.	Farakhábád.	Prátápgaṇj.	Aurangábád	Káliká pur	Likárdiwání.
Who have as much fish as they please,	200	2/64	—	2/64	32/64	—	8/64	—	—	—	2/64	—	few	40/64	16/64	few	32/64	44/64	2/64	—
Who have fish daily in the cheap season, but only occasionally in the dear season,	60/64	40/64	48/64	52/64	28/64	46/64	54/64	16/64	10/64	12/64	32/64	38/64	48/64	24/64	40/64	48/64	24/64	24/64	52/64	48/64
Who eat what they can catch,	300	14/64	16/64	6/64	few	12/64	few	40/64	16/64	24/64	32/64	24/64	8/64	few	8/64	16/64	few	4/64	30/64	16/64
Who reject fish,	2/3	1/64	few	4/64	4/64	4/64	2/64	4/64	12/64	8/64	8/64	few	few	few	few	100	8/64	4/64	few	few

The following is a list of the species which I procured; and for each kind remarked upon in other Districts, I have made references by the initial and number to the lists given in the accounts of the Districts formerly surveyed. The names of the fishes found in this District, wherever not otherwise mentioned, are those used at Monghir.

I begin with a list of those I found in or near the Atrái at Pátnitalá.

1. *Sankchi*.[1] I was a good deal surprised to find, so high up a fresh water river as Monghir, a species of Raia, but I am told that this fish is not uncommon so high up even as Cawnpur. This species approaches nearer the Lymme described by Lacepéde than to any other mentioned by that author; but may readily be distinguished by having a fin on the forepart of the under side of the tail. It does not grow to a large size; at Monghir it is uncommon, but is thought very good. In Bengal it is called Sănkăch; and its name in the Sanskrit language is said to be Sankú, but these names are probably generic.

2. *Phokchá*[2] of Monghir differs from the species of *Tetrodon* called by that name at Náthpur. It is, however, very probable that both may be called by the same name, as they have strong affinities. At Calcutta this is called the Gáng Pataká, from its frequenting rivers, while the other is most commonly found in marshes, tanks, or ditches. The fish which I am now describing grows to about six inches in length, and when irritated does not swell near so much in proportion as the other kind.

3. *Bámach*[3] is an ugly animal even for an eel, and may perhaps be the Murene tachetée of Lacepéde. Europeans who like eels think this very good, but it is not common. When full grown, it is said to be 2½ cubits long, and 1 cubit in circumference, but I strongly suspect that the latter dimension is exaggerated. The one which I procured, 38 inches long, was only 6½ inches round. It is a very distinct species from the Vamos of the lower parts of Bengal, although the names are undoubtedly the same. Eels are said in the Sanskrit language to be called Săshyă and Sailushbhŭk, but the name is probably generic.

4. The *Vám*[4] (P. No. 7) is the species of Macrognathe called anguilloné (armé?) by Lacepéde. In the Sanskrit language this fish is said to be called Vămĭ, Sŭkshmămŭkhă and Băhyăprĭshthăikăkăntăkă.

5. The *Pát Gainchi*[5] (P. No. 8) is another species of the same genus.

6. The *Bŭllá*[6] of Monghir at Náthpur (P. No. 9) is called *Gŭllá*.

[1] *Raia sancur*, Ham. Buch. Fish. Ganges, p. 2, MS. drawing, No. 65.

[2] *Tetrodon fluviatilis* (variety) Ham. Buch. Fish. Ganges, p. 6, pl. 30, f. 1.

[3] *Muræna maculata*, Dacep, Fishes of the Ganges, p. 23.

[4] *Macrognathus armatus*, Lacep. Fish. Ganges, p. 28, pl. 37, f. 6.

[5] *Macrognathus aculeatus*, Ham. Buch. Fish. Ganges, p. 29.

[6] *Gobius giuris*, Ham. Buch. Fish. Ganges, p. 51, pl. 33, f. 15.

The names are undoubtedly the same, but whether my copyists have fallen into an error, or whether the fishermen have pronounced indistinctly, they being a people grossly ignorant, it is impossible to say.

7. The *Khisrá* is the species of Trichopode called Sáuá Khalisha at Goálpárá (R. No. 10), and Kotrá at Náthpur (P. No. 10).

8. *Gărai* is the Ophiocephalus punctatus of Block[1] (P. No. 16). In the Sanskrit language this fish is said to be called Gărăkă, Găraghní and Săkŭlarbhăkă.

9. The *Saurí*[2] is the Ophiocephale Wrahle of Lacepéde (R. No. 15). In the Sanskrit language this fish is called Sakŭlă.

10. The *Găjăli*,[3] another species of the same genus, at Náthpur, was called Bhongrá (P. No. 17), and in the Sanskrit is said to be called Sála.

11. The *Dhálo*[4] is a Holocentre (P. No. 21), called Bhedá in many parts of Bengal.

12. The *Păthrí*[5] is also called *Bholá*, and is a species of Lutian, which by the Europeans at Calcutta is often called a whiting, being a fish nearly of the same size and somewhat of the same taste with our European fish of that name, although it is inferior in quality, and, in the eye of the naturalist, has little or no affinity. I am inclined to think that it is the Lutian Chinois of Lacepéde. It is common in the mouths of the Ganges. At Lokipur, on the eastern of these, it is called the Bholá, and at Calcutta, on the western mouth, it is called Kát bholá. It ascends the Ganges as high at least as Monghir, and is very common in the Ghágrí.

13. *Bholá*,[6] from what I have above said, must be perceived to be a generic term, and the species which at Monghir is considered as the prototype at Calcutta, is called Pámá Bholá; and by the English there is also called a whiting, but in the mouths of the Ganges this species often grows to the size of a cod. In this upper part of the river it is usually of the size of a whiting, and in every respect has a very strong affinity to the other Bholá, being also a species of Lutian.

14. At Monghir the prototype of the next Gangetic Genus,

[1] *Ophiocephalus lata*, Ham Buch. Fish. Ganges, p. 63, pl. 34, f. 18.
[2] *Ophiocephalus wrahle*, Fish. Ganges, p. 60, pl. 31, f. 17.
[3] *Ophiocephalus marulius*, Ham. Buch. Fish. Ganges, p. 65, pl. 22, f. 19.
[4] *Labrus badis*, Ham. Buch. Fish. Ganges, p. 96, pl. 30, f. 32.
[5] *Bola coitor*, Ham. Buch. Fish. Ganges, p. 75, pl. 27, f. 24.
[6] *Bola pama*, Ham. Buch. Fish. Ganges, p. 79, pl. 32, f. 26.

Chándá,[1] is considered to be the small species of Centropome, the 25th of the Purniah and Rangpur lists.

15. The *Chhotá Chándá*[2] is another species (D. No. 12, P. No. 26) of the same Gangetic genus.

16. The *Vághi*[3] is a small Cobitis (P. No. 27).

17. The *Nãktá*[4] is another (P. No. 32), which at Náthpur is called Khărikă.

18. The *Rámtengrá*[5] is another (R. No. 33) called Bilturi at Goálpárá.

19. In the perennial sources amid the rocks of the Monghir Hills, is found another small Cobitis, which I have seen nowhere else, and for which the natives have invented no name.

20. The *Măngrí*[6] is the Macropteronotus batrachus Lacepéde (P. No. 37). In the Sanskrit language it is said to be called Mădgŭră.

21. *Sĭnghi*,[7] is the Silurus fossilis of Lacepéde (P. No. 38), and from the number of names it is said to have acquired in the sacred tongue, must have strongly attracted the notice of the Bráhmans. These names are Sringí, Mădgŭrásí, Kŭkŭ, Gomătsyálí, Trĭkăntăká and Bĭshăkăntăká.

22. *Bŏyárí*,[8] another silurus (P. No. 39). This ugly fish has also acquired many Sanskrit names:—Săhăsrădănshtră, Páthină Rŭpyăbărnă, Udărádírghă and Măhásĭră.

23. *Támbŭlĭyá páptá*[9] or "páptá like a betel leaf." Another silurus, the Pobho of Goálpárá (R. No. 37). Although an excellent fish, it has only in the sacred tongue acquired one name, Măhásăphăr, and this is probably generic.

24. The *Páptá*[10] of this place is another excellent silurus, the Kánipábdá of Goálpárá (R. No. 38).

[1] *Chanda bogoda*, Ham. Buch. Fish. Ganges, p. 111, MS. drawings, No. 3, as *Centropomus bogoda*.

[2] *Chanda ranga*, Ham. Buch. Fish. Ganges, p. 113.

[3] *Cobitis dario*, Ham. Buch. Fish. Ganges, p. 354, pl. 29, f. 95.

[4] *Cobitis corica*, Ham. Buch. Fish. Ganges, p. 359, MS. drawings, No. 52, as *Cobitis khorica*.

[5] *Cobitis bilturio*, Ham. Buch. Fish. Ganges, p. 358, MS. drawings, No. 49, as *C. bilturi*.

[6] *Macropteronotus magur*, Ham. Buch. Fish. Ganges, p. 146, pl. 26, f. 45.

[7] *Silurus singio*, Ham. Buch. Fish. Ganges, p. 147, pl. 37, f. 46.

[8] *Silurus boalis*, Ham. Buch. Fish. Ganges, p. 154, pl. 29, f. 49.

[9] *Silurus pabo*, Ham. Buch. Fish. Ganges, p. 153, pl. 22, f. 48.

[10] *Silurus canio*, Ham. Buch. Fish. Ganges, p. 151.

25. The *Bătausí*[1] is the Malapture which at Náthpur is called Angcháchеyá (P. No. 45).

26. The *Silon*,[2] is the species of Pimelode, almost everywhere known by the same name (R. No. 58, D. No. 55); but in the higher dialect of Bengal, it is called Sĭlăndhă, and in the Sanskrit it is Silendhra and Sĭlĭndhă.

27. The *Băchoyá*[3] is another Pimelode, called Vácha in Bengal (R. No. 59), and Kátlá at Náthpur (P. No. 47).

28. The *Pátási*[4] is another Pimelode, at Goálpárá called Baradaha (R. No. 54).

29. The *Rĭthá*[5] is another Pimelode, (R. No. 56).

30. The *Gágrá Tengrá*[6] is another, the Ariyá of Náthpur (P. No. 52). The name Gágrá Tengrá, in the lower parts of the Ganges, is given to a very different species of the same genus.

31. The *Ghorchelhá*,[7] is another very common Pimelode, the Vágháir of Náthpur (P. No. 53). This name is probably wrong, as it is likewise given to a kind of Cyprinus, which is so called in other places also, and is therefore in all probability the true Ghorchelhá.

32. The *Belaundá*[8] is another Pimelode, the Menădá of Náthpur (P. No. 54).

33. The *Pălwá Tengrá*,[9] is another Pimelode, the Páthari Tengrá of Goálpárá (R. No. 49).

34. The *Băjhĭ*[10] is another Pimelode, which at Náthpur is called Hárá Tengărá (P. No. 56).

35. The *Găngtí*[11] is a small Pimelode, the Măhŭjăr of Náthpur (P. No. 59), and Tengrá of Goálpárá (R. No. 53).

[1] *Malapterurus coila*, Ham. Buch. Fish. Ganges, p. 158, and MS. drawings, No. 7, as *Malopterure kayali.*

[2] *Pimelodus silondia*, Ham. Buch. Fish. Ganges, p. 160, pl. 7, f. 50.

[3] *Pimelodus vacha*, Ham. Buch. Fish. Ganges, p. 196, pl. 19, f. 64,

[4] *Pimelodus urua*, Ham. Buch. Fish. Ganges, p. 177, MS. drawings, No. 15, *Purna.*

[5] *Pimelodus rita*, Ham. Buch. Fish. Ganges, p. 165, pl. 24, f. 53.

[6] *Pimelodus arius*, Ham. Buch. Fish Ganges, p. 170.

[7] *Pimelodus bagarius*, Ham. Buch. Fish. Ganges, p. 186, pl. 7, f. 62.

[8] *Pimelodus menoda*, Ham. Buch. Fish. Ganges, p. 203, pl. 1, f. 72, MS. drawings, No. 18, as *P. telgagra* and *menoda.*

[9] *Pimelodus cavasius*, Ham. Buch. Fish. Ganges, p. 203, pl. 11, f. 67.

[10] *Pimelodus carcio*, Ham. Buch. Fish. Ganges, p. 181, pl. 3, f. 61, erroneously termed *P. tengara.*

[11] *Pimelodus tengana*, Ham. Buch. Fish. Ganges, p. 176, pl. 39, f. 58.

36. The *Bătná*[1] is another Pimelode, the Pădná of Náthpur (P. No. 62), and Kengya of Goálpárá (R. No. 46).

37. The *Tinkántoyá*,[2] or three prickles, is still another Pimelode, of at least is nearer that genus than any other. It is the Hárá of Náthpur (P. No. 66).

38. The *Pemá*[3] is the ugly creature, which in the Rangpur District is called Chaká (R. No. 65).

39. The *Pátlí*[4] is the small fish (P. 70, R. 68), which I have referred to the genus Stolephore.

40. The *Kauyăl*[5] is a species of Esox, the Dhongá of Náthpur (P. No. 69), and Ghore of Goálpárá (R. No. 66).

41. The *Andewárí*[6] is a species of Mugil, at Náthpur named Hŭndărá (P. No. 73), and at Goálpárá (R. N. 70), called Muji.

42. The *Kánchătí*[7] is a species of Myste, the Gohătí of Náthpur (P. No. 75), and Phole of Goálpárá (R. No. 73).

43. The *Golhí*[8] is the Myste, which at Náthpur is called Bhuní (P. No. 76), and at Goálpárá (R. No. 74) is named Bara Chital. At Monghir when it grows very large it is called Moe.

44. The *Phăsíyá*[9] is a species of Clupea, the Phánsá of the Mahánandá (P. No. 77), and Phoingyá of Goálpárá (R. No. 71).

45. The *Hilsá*[10] of the Hindi dialect, or Ilish of the Bengalis, (P. No. 79, and R. No 76), ascends only in small quantities so far as Monghir, and there is very poor. In the S.E. corner of the District it is plentiful and tolerably good. In the Sanskrit language it is said to be called Illisha and Mătsyărájă.

46. The *Chăprá*,[11] except in size and the difference of a few rays in the fins, is so like the above that I should be almost inclined to

[1] *Pimelodus rama*, Ham. Buch. Fish. Ganges, p. 176, pl. 3, f. 55.

[2] *Pimelodus hara*, Ham. Buch. Fish. Ganges, p. 198, MS. drawings, No. 12.

[3] *Platystacus chaca*, Ham. Buch. Fish. Ganges, p. 140, pl. 28, f. 43.

[4] *Cyprinus sucatio*, Ham. Buch. Fish. Ganges, p. 347, MS. drawings, No. 45, as *Stolephorus sukati.*

[5] *Esox cancila*, Ham. Buch. Fish. Ganges, p. 213, pl. 27, f. 70.

[6] *Mugil corsula*, Ham. Buch. Fish. Ganges, p. 221, pl. 9, f. 97.

[7] *Mystus kapirat*, Ham. Buch. Fish. Ganges, p. 235.

[8] *Mystus chitala*, Ham. Buch. Fish. Ganges, p. 236, figure reproduced in the illustrations of Indian Zoology.

[9] *Clupea telara*, Ham. Buch. Fish. Ganges, p. 241, pl. 2, f. 72.

[10] *Clupanodon ilisha*, Ham. Buch. Fish. Ganges, p. 243, probably not pl. 19, f. 73.

[11] *Clupanodon chapra*, Ham. Buch. Fish. Ganges, p. 248, MS. drawings No. 89.

take it for the young Hĭlsá. It is a common fish, 6 or 8 inches long. I do not think that I have seen exactly the same fish anywhere else, although it comes very near the Manmin of Goálpárá (D. No. 35).

47. The *Sŭhĭyá*[1] is another Clupanodon not very distinct from the last mentioned, but smaller. It is the Khayrá of Goálpárá (R. No. 78).

48. The *Káhi*[2] is another kindred fish, the Mati of Goálpárá (R. No. 79).

49. The small fish somewhat resembling the Cyprini which was called Gŭttá at Náthpur (P. No. 88), and Ghilá Chándá at Goálpárá (R. No. 122), at Monghir was brought under two names, the *Pĭthárí*[3] and *Gordá*, its real name is therefore uncertain.

50. *Chápti*,[4] it must be observed, near Calcutta, is a name given to one of the genus Lutian, which by the English is called a whiting, but at Monghir it is the name of a small fish approaching to a Cyprinus, which at Goálpárá is called Layukuli (R. No. 84).

51. The *Málí*[5] at Goálpárá was called Phulchelá (R. No. 82)

52. The *Chămăk Chĕlhă* is the Nariyali Chelá of Goálpárá (R. No. 81).

53. The *Ghorchelhá*[6] is another kindred ill-defined Cyprinus called Ghoráchelá at Goálpárá (R. No. 80), which seems to be the same name, signifying horse chelá on account of its size, which is larger than that of the other Chelá.

54. The *Khŭski*[7] is a small Cyprinus, the Jáyá of Náthpur (P. No. 91).

55. The *Chĭpŭyá*[8] is another very similar fish. The Bukrángí of Goálpárá (R. No. 86); the name Chĭpŭyá is, however, uncertain, for the same fish was brought also as the Piroĭyá.

[1] *Clupanodon cortius*, Ham. Buch. Fish. Ganges, p. 249.

[2] *Clupanodon motius*, Ham. Buch. Fish. Ganges, p. 251, MS. drawings, No. 88, as *C. moti.*

[3] *Cyprinus cotio*, Ham. Buch. Fish. Ganges, p. 339, pl. 39, f. 93.

[4] *Cyprinus atpar*, Ham. Buch. Fish. Ganges, p. 259, and MS. drawings, No. 142, as *Cyprinus layukuli.*

[5] *Cyprinus phulo*, Ham. Buch. Fish. Ganges, p. 262, and MS. drawings, No. 130, as *C. phul chela.*

[6] *Cyprinus gora*, Ham. Buch. Fish. Ganges, p. 263, and MS. drawings, No. 146, as *C. gora.*

[7] *Cyprinus jaya*, Ham. Buch. Fish. Ganges, p. 333, and MS. drawings, No. 135, as *C. jaya.*

[8] MS. drawings No. 104, as *Cyprinus bukranga.*

56. The *Pátharchátá*[1] of the Chándan river in the interior of the District, is the Chedrá of the Tistá (R. No. 90).

57. The *Mãyári*[2] of the same river is nearly allied to the above, and is what in the Rangpur list (No. 89) is called Khaksá.

58. Under the name *Vághrá*,[3] the fishermen of Monghir brought two small fishes strongly resembling the last-mentioned Cyprinus. One I have seen nowhere else, nor do its qualities merit peculiar notice.

59. The other *Vághrá*[4] in the Rangpur list (No. 88) is called Barilá.

60. The *Bánghí Rewá*[5] is a Cyprinus approaching to a Mugil, and is the Bhángan of the Rangpur list (No. 95).

61. The *Arăngá*[6] is a similar fish—the Elangá of the Rangpur list (No. 93). The two names are evidently the same. The name in the Sanskrit is said to be Erăngă.

62. The *Bhángnăthí*[7] is a similar fish, the Vogá of Goálpárá (R. No. 98).

63. The *Chhăhí*[8] of the arid rivers of the south is another similar fish, which at Náthpur is called Pángŭsĭyá (P. No. 102).

64. The first of these fishes allied to both the Cyprini and Mugils is here called Mírkĭ[9] and Năyen; it is the Mĭrká of Náthpur (P. No. 104).

65. The *Kálbáns*[10] is a proper Cyprinus, which has been mentioned in every District hitherto surveyed. It is the Băsráhá (No. 107.) of Purniah, and the Kálbasu of Bengal (R. No. 108). When caught in water that is pure and has a hard bottom, it assumes a different colour from what it has in dirty pools, many of the

[1] *Cyprinus chedra*, Ham. Buch. Fish. Ganges, p. 273, and MS. drawings, No. 111, as *C. chedra*.

[2] *Cyprinus cocsa*, Ham. Buch. Fish. Ganges, p. 272, pl. 3, f. 77.

[3] *Cyprinus vagra*, Ham. Buch. Fish. Ganges, p. 269.

[4] *Cyprinus barila*, Ham. Buch. Fish. Ganges, p. 267, MS. drawings, No. 134.

[5] *Cyprinus reba*, Ham. Buch. Fish. Ganges, p. 280, and MS. drawings, No. 117, as *C. bangana*.

[6] *Cyprinus elanga*, Ham. Buch. Fish. Ganges, p. 281, MS. drawings, No. 103.

[7] *Cyprinus boga*, Ham. Buch. Fish. Ganges, p. 286, pl. 28, f. 80.

[8] *Cyprinus pangusia*, Ham. Buch. Fish. Ganges, p. 285, MS. drawings, No. 116, as *C. pangusiya*.

[9] *Cyprinus mrigala*, Ham. Buch Fish. Ganges, p. 279, pl. 6, f. 79.

[10] *Cyprinus calbasu*, Ham. Buch. Fish. Ganges, p. 297, pl. 2, f. 83.

lateral scales being then of a coppery hue. In this case it is called Kŭndhná.

66. The *Rohŭ*,[1] that most elegant of carps, called Rohit in Bengal (R. No. 100), is here, perhaps, the most common fish; but being generally caught in dirty stagnant pools, it is seldom very good. Most excellent Rohŭs are, however, sometimes procured from the river. No fish seems so much to have attracted the attention of the Bráhmans, and in the Sanskrit language it is said to be called Rohĭtă, Răkotdără, Răktămŭkhă, Răktákshă, Răktápáksătĭ, Krĭshnăpăkshă, Krĭshnăprĭshthă, and Jhăshăsreshta.

67. The *Kŭrsá* [2] of Monghir is the fish mentioned at Náthpur (P. No. 108) by the same name.

68. The *Kátlá*[3] of the Hindi dialect is the Kátal of Bengal (R. No. 109). What is most commonly procured and most abundant, is very indifferent, owing to the same cause which affects the Rŏhŭ.

69. The *Dădhai*[4] is the fish called Dárhí at Náthpur (P. No. 114), and Saran punthi in Bengal (R. No. 111).

70. The *Săphări*[5] of the Sănskrĭt (P. 116) has, it is said, in that language, two other names, Proshthí and Tĭktămătsyă. In this District also it is considered as the prototype of an Indian genus of fish, included amongst the Cyprini of Zoologists. The vulgar name is everywhere radically the same, but on the smaller rivers of the south it is pronounced Ponthí, and at Monghir it is called Ponthĭyá.

71. The *Tiktă Săphări*[6] of the sacred language, the Tit punthi of Rangpur (No. 115), and Chángyi of Purniah (No. 118), is at Monghir called the Sámăr Ponthí.

72. The *Dhemní*[7] of Monghir is the Ghugini of Goálpárá (R. No. 120).

[1] *Cyprinus rohita*, Ham. Buch. Fish. Ganges, p. 301, pl. 36, f. 85.

[2] *Cyprinus cursa*, Ham. Buch. Fish. Ganges, p. 290, and MS. drawings No. 124, as *C. cursa*.

[3] *Cyprinus catla*, Ham. Buch. Fish. Ganges, p. 287, pl. 13, f. 81.

[4] *Cyprinus sarana*, Ham. Buch. Fish. Ganges, p. 307, MS. drawing missing at Calcutta.

[5] *Cyprinus sophore*, Ham. Buch. Fishes of Ganges, p. 310, pl. 19, f. 86.

[6] *Cyprinus ticto*, Ham. Buch. Fishes of Ganges, p. 314, pl. 8. f. 87.

[7] *Cyprinus guganio*, Ham. Buch. Fishes of Ganges, p. 338, and MS. Drawings No. 101, as *C. gugani*.

73. The *Máráwá*[1] is the Márá of Purniah (No. 125), probably improperly written, and the Mauyá of Rangpur (No. 121.)

74. The *Sáhárí*[2] is a small Cyprinus somewhat like a minnow, which is found in the small streams among rocks, south from Mónghir, and at Náthpur is named the Kosíyá Dengrá (P. No. 127).

75. The *Dángúlá*[3] is another small Cyprinus, found in the same places, and having its sides curiously reticulated with blue lines. I have seen it nowhere else.

76. The *Godíyárí*[4] is another small Cyprinus found in the same places, which, together with the Desári (P. No. 133), the Lati (R. No. 125), the Dyángrá (P. No. 132), the Páúgsi (P. No. 131), and some others, has some affinity to the genus Cobitis, although they have very distinct scales, and it is by the want of these chiefly, in my opinion, that the genus Cobitis can be distinguished from that called Cyprinus.

Oblong crustaceous fishes are in very great abundance through the whole course of the Ganges, and at Monghir those about the size of a prawn are remarkably well tasted.

The small crabs mentioned in the accounts of the Districts formerly surveyed are common in the inundated lands.

[1] *Cyprinus mola*, Ham. Buch. Fish. Ganges, p. 334, pl. 38, f. 92.

[2] *Cyprinus danrica*, Ham. Buch. Fish. Ganges, p 325, pl. 16, f. 88.

[3] *Cyprinus dangila*, Ham. Buch. Fish. Ganges, p. 321, and MS. drawings No. 140, as *C. daugila.*

[4] *Cyprinus lamta*, Ham. Buch. Fish. Ganges, p. 343, and MS. drawings No. 105, as *Cyprinus godiyari.*

FISH AND FISHERIES OF BEHAR AND PATNA.

EXCEPT on the banks of the Ganges, fish, during the greater part of the year, are scarce, and mostly of a very poor quality. In the Son, indeed, the fish is better than in the Ganges, nor have I ever seen fresh water fish of a quality superior to several kinds of the carp, which are caught in that river; but, whether from the fish being there scarce, or from want of sufficient skill in the fishermen, the supply from the Son is trifling. In the rainy season, indeed, this river swells so enormously and rushes with such violence that few fish, I believe, could by any means be caught; and in the dry season the water is in general so shallow and clear that the simple and imperfect methods used by the native fishermen are quite inadequate. The other rivers of the interior are mere torrents, and although a few fish ascend in the rainy season and are caught when the water subsides, the supply that they give is trifling. In some places, however, the fishermen, after the rivers have greatly subsided, form dams, which collect deep pools of water, into which all the remaining fish assemble, and are kept as a supply for spring. The reservoirs made for watering the fields, during four or five months in the year, give a considerable quantity of fish, but all the kinds are small, seldom exceeding three or four inches in length. In August every rice field swarms with such, and many of them, no doubt, make their way up the rivers, and from thence through the canals used in irrigation, and through the rills that fall from the fields; but these means seem to me inadequate to account for the number of fish that appear, and I have no doubt that the greater part is bred from eggs that remain dry in the soil until hatched by the heat and moisture of the rainy season. As the fields dry, a great many of these fish become a prey to the lower class of farmers, who catch for their own use; but vast multitudes flock into the reservoirs, ditches being in general cut to give them a passage as

the waters retire. The reservoirs are let by the owners to professional fishermen, who, as the water dries up, catch the fish with very little trouble, and the supply continues pretty copious until February. The only supply after that, until September, is procured from few tanks reservoirs, and pools in rivers, mostly artificial, as just now mentioned that retain water throughout the year; but as such places are few in number, the supply is very scanty, and does not employ 1-8th of the fishermen. In the Ganges the supply of fish is copious from the middle of October, until the rainy season has swollen the river about the end of June.

The fisheries in the pools and reaches of the rivers of the interior, in the reservoirs, and in ponds, are annexed to the lands by which they are surrounded, and are let for very trifling sums. The whole fisheries in the division of Sáhibganj, I was told, let for about 7000 rupees a year to about 800 fishermen, but this is a very large proportion of the whole of the fisheries of the Behar District, which I am told may let at about 16,000 rupees a year. Some landlords, however, agree with people, who undertake to keep the reservoirs in repair for the fish. In the District of Patná city the fisheries may be let at between three and four thousand rupees a year. The main stream of the Ganges is free to all; but fishermen, for the land which their huts occupy, always pay higher than any other class. Any fisherman may, therefore, use the great river, but if he erects on the bank a shed, however wretched, he must pay rent, in the rate of which his gains as a fisherman are always considered. In creeks or channels of the river that, in the dry season, have no current (Kol, Dáb, Dámas) the fish are the property of the owner of the bank, but the number and extent of such in these Districts are very trifling, and disputes about the property of the largest, in the immediate vicinity of Patná, have put a total stop to its being used, it not being the duty of any person to interfere. The supply in Patná, however, from the middle of October to the middle of June, is copious, there being many fisheries on the north side of the Ganges.

Very few of the fishermen live the whole year by this profession. During the rainy season, those near the Ganges act chiefly as boatmen, and fish about eight months. In the interior, during spring, some of them go to the forests to make catechu, and the remainder reap wheat and barley. In the early part of the rainy season, they

transplant and weed They fish only, therefore, four or five months, and their operations are much interrupted by the rice harvest, in which, during the winter, by far the greater number are employed. During the time that they are employed in fishing, it is supposed that, besides paying the rent of the fishery, which is high, each man, assisted by a woman to sell, can clear from three to five rupees a month. Near the Ganges, it is supposed that there are 530 houses of fishermen, in which there will be about 1200 able-bodied men. These have not above 200 boats employed in fishing, exclusive of what are used for ferries. In the interior, there are about 1100 houses, with more than double the number of able-bodied men. These have no boats, except such as are employed as ferries, and a very few in the Son. It must be observed that the number of people of fishing castes, is much greater than what I have here stated. I only here include such as are actually fishermen.

POPULATION AND PROPORTION OF FISHING CLASSES, ACCORDING TO THE CENSUS OF 1872.

Name of District.	Total Population	Total male adults	Percentage of adult males to the total population	Total fishing population	Fishermen.	Fishmongers.			Netmakers.
						Male	Female	Total	
Patná	1,559,638	491,394	31 5	23,752	452	200	233	433	10
Gayá (former Behar?)	1,949,750	609,553	31 3	12,694	1070	—	22	22	—

With respect to the kinds, I have little to offer, as no reasonable remuneration would induce the fishermen to bring me a complete set of the various sorts. In the most favourable season of the year, I hired two men for two months to attend the fishermen, and to purchase every kind that was caught, and the result of their labour is given below:—

VARIETIES OF FISH—

1. The *Rájá*, called *Sankchí*[1] at Monghir (Bhágalpur, No. 1) is known here by the same name, and sometimes its body is three feet in diameter. A considerable quantity of oil separates from it in boiling, and is used as a medicine. Great numbers are caught when the river begins to fall.

[1] *Raia sancur*, Ham. Buch. Fish. Ganges, p. 2, MS. drawings No. 65.

2. The *Phúlíyá Phokchá*[1] of Patná is the species of Tetrodon, which in Purniah (No. 1) is called simply Phokchá.

3. The *Bárá Phokchá*[2] of Patná, is the *Phokchá* of Monghir (B No. 2.)

4. The Eel, which, in the Purniah list (No. 5) is called Sŭsŭká-kánchăl, at Patná, *Dŭdhíyá*.[3]

5. The *Vám*[4] of Patná is called by the same name at Monghir (B. No. 4).

6. The *Páthí*[5] of Patná is the Macrognathe aquillonée of Lacepéde, and the same with the Pát of Monghir (B. No. 5). The names are evidently the same; I suppose the orthography here is the most correct.

7. The *Bhŭngrí*[6] is another species of the same genus, which is the same with the Gochi of Rangpur (No. 5.)

8. The Gobius called here *Gŭllá*[7] is the Bŭllá of Monghir (B. No. 6), which shows that the orthography given there was erroneous, as both at Patná and Náthpur the word commences with G.

9. The large (*Bárá*) *Kheshrá*[8] of Patná is the species of Trichopode called Khalishá in Rangpur (No. 7), and is called large, not on account of its size, but because it is considered as the prototype of a genus.

10. The *Lálkotrá*[9] is another Trichopode. which is called Lálkhalishá in Rangpur (No. 12). The name Lálkotrá in Purniah (No. 12) is given to a very distinct species[10] (R. 8), although both in their colour have a mixture of red, from whence the name is derived.

11. The *Saurí*[11] of Patná is called by the same name at Monghir (No. 9), and is the Ophiocephale Wrahle of Lacepéde.

[1] *Tetrodon fluviatilis*, Ham. Buch. Fish. Ganges, p. 6, pl. 30, f. 1.

[2] ? *Tetrodon fluviatilis* (variety), Ham. Buch.

[3] *Ophisurus hijala*, Ham. Buch. Fish. Ganges, p. 20. pl. 5, f. 5.

[4] *Macrognathus armatus*, Lacep. Fish. Ganges, p. 28, pl. 37, f. 6.

[5] *Macrognathus aculeatus*, Fish. Ganges, p. 29.

[6] *Macrognathus pancalus*, Ham. Buch. Fish. Ganges, p. 30, pl. 17, f. 7.

[7] *Gobius giuris*, Ham. Buch. Fish. Ganges, p. 51, pl. 33, f. 15.

[8] *Trichopodus colisa*, Ham. Buch. Fish. Ganges, p. 117, pl. 15, f. 40.

[9] *Trichopodus lalius*, Ham. Buch. Fish. Ganges, p. 120, MS. drawings No. 37, as *T. ruber*.

[10] *Trichopodus bejeus*, Ham. Buch. Fish. Ganges, p. 118.

[11] *Ophiocephalus wrahle*, Fish. Ganges, p. 60, pl. 31, f. 17.

12. The *Chengá*[1] of Patná is another species of the same genus, and is everywhere known by the same name (P. No. 15).

13. The *Gărai*[2] of Patná is another species of the same genus, and is known by the same name at Monghir (B. No. 8).

14. The *Dhálo*[3] of Patná is known by the same name at Monghir (B. No. 11), and is a Holocentre.

15. The *Kăĺai*[4] of Patná is the Lutjan grimpeur of Lacepéde, often already mentioned (P. No. 20, D. 10, R. 20).

16. The *Bholá*[5] of Monghir (B. No. 13) is found also at Patná, where it is called by the same name.

17. The *Chándá*[6] of Patná differs from that of Monghir, and is the small fish called Bakul in Rangpur (No. 23).

18. The *Sisrá*[7] of Patná is the small Centropome called Bagurá at Rangpur (No. 25).

19. The small species of Cobitis called *Angchátá*[8] at Patná is the same with the Rámtengrá of Monghir (B. No. 18). The latter name was probably a mistake, as the fish has no sort of affinity to the others called Tengrá.

20. The *Vághi*[9] is a Cobitis which derives its name from being striped like a tiger, and is called by the same name in Purniah (No. 27), and Monghir (B No. 16).

21. The *Látá*[10] of Patná is the same Cobitis with that which at Rangpur is called Bute (No. 30).

22. The *Măngrí*[11] of Monghir (B. No. 20) is known at Patná by the same name.

23. The same is the case with the *Sĭnghĭ*[12] of Monghir (B. No. 21).

24. And with the *Boyárí*[13] (B. No. 22).

[1] *Ophiocephalus gachua*, Ham. Buch. Fish. Ganges, p. 68, pl. 21, f. 21.

[2] *Ophiocephalus lata*, Ham. Buch. Fish. Ganges, p. 63, pl. 34, f. 18.

[3] *Labrus badis*, Ham. Buch. Fish. Ganges, p. 96, pl. 30, f. 32.

[4] *Coius cobojius*, Ham. Buch. Fish. Ganges, p. 98, pl. 13, f. 33.

[5] *Bola pama*, Ham. Buch. Fish. Ganges, p. 79, pl. 32, f. 26.

[6] *Chanda baculis*, Ham. Buch. Fish. Ganges, p. 112, MS. drawings No. 2, as *Centropomus* (?) *bahrul.*

[7] *Chanda bogoda*, Ham. Buch. Fish. Ganges, p. 111, MS. drawings No. 3, as *Centropomus bogoda.*

[8] *Cobitis bilturio*, Ham. Buch. Fish. Ganges, p. 358, MS. drawings No. 49.

[9] *Cobitis dario*, Ham. Buch. Fish. Ganges, p. 354, pl. 29, f. 95.

[10] *Cobitis guntea*, Ham. Buch. Fish. Ganges, p. 353, and MS. drawings No. 58

[11] *Macropteronotus magur*, Ham. Buch. Fish. Ganges, p. 146, pl. 26, f. 45.

[12] *Silurus singio*, Ham. Buch. Fish. Ganges, p. 147, pl. 37, f. 46.

[13] *Silurus boalis*, Ham. Buch. Fish. Ganges, p. 154, pl. 29, f. 49.

25. And with the *Páptá*[1] (B. No. 24).

26. And with the *Támbŭlĭyá Páptá*[2] (B. No. 23). The two last are plentiful at Patná, and are most excellent fishes.

27. The Pimelodes called Băchoyá at Monghir (B. No. 27), at Patná is called *Sŭgwábăchoyá*.[3]

28. The Pimelode which at Patná is called *Pátási*,[4] differs very much from the fish so-called at Monghir, and is the Doya of Rangpur (No. 55).

29. The *Rithá*[5] of Monghir (No. 29) and Patná are the same.

30. The *Ar*[6] of Patná is the Ari of Rangpur, No. 60.

31. The *Sŭsná Pălwá*[7] of Patná is the Páthari Tengrá of Rangpur, No. 49.

32. The *Chhotá Tengrá*[8] of Patná is the Tengrá of Rangpur, No. 43.

33. The *Belaundi*[9] of Patná is the Menădá of Purniah, No. 54.

34. The *Kauyăl*[10] of Patná, mentioned by the same name in the account of Bhágalpur (No. 40) is a species of Esox.

35. To the same genus belongs the *Náktá Kauyăl*[11] of Patná, a small fish that hitherto I have had no occasion to mention, nor is it described in Lacepéde. It does not grow to so large a size as the Kauyăl.

36. The *Angrĭyárí*[12] is the species of Muge called Ghobol in Dinájpur (No. 31), and is found in the Ganges, but is not common so high up as Patná.

37. The *Thărri*[13] of Patná is a smaller species of Muge, which at Goálpárá is named Khaskhasiyá, R. No. 69.

[1] *Silurus canio*, Ham. Buch. Fish. Ganges, p. 151.

[2] *Silurus pabo*, Ham. Buch. Fish. Ganges, p. 153, pl. 22, f. 48.

[3] *Pimelodus vacha*, Ham. Buch. Fish. Ganges, p. 196, pl. 16, f. 64.

[4] *Pimelodus anguis*, Ham. Buch. Fish. Ganges, p. 180, pl. 29, f. 59.

[5] *Pimelodus rita*, Ham. Buch. Fish. Ganges, p. 165, pl. 24, f. 53.

[6] *Pimelodus arius*, Ham. Buch. Fish. Ganges, p. 170.

[7] *Pimelodus cavasius*, Ham. Buch. Fish. Ganges, p. 203, pl. 11, f. 67.

[8] *Pimelodus carcio*, Ham. Buch. Fish. Ganges, p. 181, pl. 3, f. 61, erroneously termed *P. tengara*.

[9] *Pimelodus menoda*, Ham. Buch. Fish. Ganges, p. 203, pl. 1, f. 72, in MS. drawings, No. 18, as *P. telgagra* and *menoda*.

[10] *Esox cancila*, Ham. Buch. Fish. Ganges, p. 213, pl. 27, f. 70.

[11] *Esox ectuncto*, Ham. Buch. Fish. Ganges, p. 212.

[12] *Mugil corsula*, Ham. Buch. Fish. Ganges, p. 221, pl. 9, f. 97.

[13] *Mugil cascasia*, Ham. Buch. Fish. Ganges, p. 217, MS. drawings, No. 68.

38. The Myste, which at Monghir was called Kánchátí (B. No. 42), is at Patná known by the name of *Kánbhúní*.[1]

39. The *Moe*[2] of Patná is the same with that of Monghir, B. No. 43.

40. The same is the case with the *Phášyá*,[3] B. No. 44.

41. The same also is the case with the *Hilsá*[4] (B. No. 45). At Patná this fish is much more plentiful than at Monghir, but this must be owing to greater pains bestowed on the fishery. They are very small and poor, but in the rainy season are the only large fish that can be usually procured.

42. The Clupanodon called Chăprá at Monghir (B. No. 46), is at Patná known by the name of *Khăyrá*,[5] a name given in various parts of Bengal to several other species of the same genus. These species are indeed so nearly allied that the distinguishing them by different names in common discourse would be of little importance.

43. The small fish that in former accounts I have referred with much doubt to the genus Cyprinus, and which at Monghir was called Pithárí and *Gordá*[6] (B. No. 49), at Patná is known by the latter name.

44. The small fish which at Monghir was called Chăptí (B. No. 50), at Patná was called *Chĭpŭyá*,[7] which is probably the true orthography, the native writers being very careless in spelling, but at Monghir there is another fish called Chĭpŭyá.

45. The *Málhí*[8] of Patná is the Málí of Monghir (B. No. 51) evidently the same name.

46. The Ghorchihá of Monghir (B. No. 53), is at Patná called *Hángotá*.[9]

47. The Chĭpŭyá of Monghir (B. No. 55), at Patná is called *Pilálohá*,[10] while, as above mentioned (No. 44), the Chĭpŭyá of

[1] *Mystus kapirat*, Ham. Buch. Fish. Ganges, p. 235.

[2] *Mystus chitala*, Ham. Buch. Fish. Ganges, p. 236.

[3] *Clupea telara*, Ham. Buch. Fish. Ganges, p. 241, pl. 2, f. 72.

[4] *Clupanodon ilisha*, Ham. Buch. Fish. Ganges. p. 243, probably not pl. 19, f. 73.

[5] *Clupanodon chapra*, Ham. Buch. Fish. Ganges, p. 248, MS. drawings, No. 89.

[6] *Cyprinus cotio*, Ham. Buch. Fish. Ganges, p. 339, pl. 39, f. 93.

[7] *Cyprinus atpar*, Ham. Buch. Fish. Ganges, p. 259, MS. drawings, No. 142, as *C. layukuli*.

[8] *Cyprinus phulo*, Ham. Buch. Fish. Ganges, p. 262, MS. drawings, No. 130, as *C. phul chela*.

[9] *Cyprinus gora*, Ham. Buch. Fish. Ganges, p. 263, MS. drawings, No. 146.

[10] MS. drawings, No. 104, as *Cyprinus bukranga*.

Patná is the Chaptí of Monghir. The two fishes, although both may be called Cyprini, have very little resemblance.

48. The first Vághrá of Monghir (B. No. 58), at Patna is named *Loyá*.[1]

49. The Bánghí rewa of Monghir (B. No. 60), at Patná, is called merely *Rewá*.[2]

50. The *Bhángnathí*[3] of Monghir (B. No. 62), at Patná, is called Bhángná.

51. The *Mírkí* or *Nãyen*[4] of Monghir (B. No. 64), is at Patná called Mírgá. In the Son this fish is most excellent.

52. The *Kálbáns*[5] of Monghir (B. No. 65), and Patná is the same fish.

53. The same is the case with the *Rohũ*[6] (B. No. 66), which, during the whole fair weather season is by far the most common fish in the markets of Patná. No pains being bestowed on its perfection or preservation, by far the greater part brought to market is young and small, in which state this fish is very poor eating, but very fine ones may be usually procured. Those from the Son are uncommonly good.

54. The *Kátlá*[7] of Monghir (B. No. 68), and of Patná is the same fish. It is not near so common as the Rohu.

55. The Tór of the Rangpur list (No. 103), at Dáúdnagar on the Son was called *Kajrá*,[8] and is one of the best fresh water fishes that I have tasted. It grows to fully as large a size as the Rohũ.

56. The Kurchhá of the Rangpur list (No. 101), at Patná is called *Kũrsá*,[9] evidently the same name.

57. The Dádhai of Monghir (B. No. 69), is at Patná called *Dárhí*,[10] as is the case at Náthpur (P. No. 114). I consider Dárhí as the

[1] *Cyprinus vagra*, Ham. Buch. Fish. Ganges, p. 269.

[2] *Cyprinus reba*, Ham. Buch. Fish. Ganges, p. 280, MS. drawings No. 117, as *C. bangana*.

[3] *Cyprinus boga*, Ham. Buch. Fish. Ganges, p. 286, pl. 28, f. 80.

[4] *Cyprinus mrigala*, Ham. Buch. Fish. Ganges, p. 279, pl. 6, f. 79.

[5] *Cyprinus calbasu*, Ham. Buch. Fish. Ganges, p. 297, pl. 2, f. 83.

[6] *Cyprinus rohita*, Ham. Buch. Fish. Ganges. p. 301, pl. 36, f. 85.

[7] *Cyprinus catla*, Ham. Buch. Fish. Ganges, p. 287, pl. 13, f. 81.

[8] *Cyprinus tor*, Ham. Buch. Fish. Ganges, p. 305, MS. drawings No. 121.

[9] *Cyprinus cursa* et *gonius*, Ham. Buch. Fish. Ganges, pp. 290-292, pl. 4, f. 82.

[10] *Cyprinus sarana*, Ham. Buch. Fish. Ganges, p. 307, MS. drawing missing in Calcutta.

real name in the Hindi dialect, and Dádhai as probably a careless orthography of the same word.

58. The *Ponthiyá*[1] of Monghir (B. No. 70) and Patná is the same, and in the interior of Behar is by far the most common fish.

59. The *Márá*[2] of Patná is the same with the fish so called in the Purniah list (No. 125), which confirms my opinion, that the name Máráwá given to it at Monghir (B. No. 73), is an improper orthography of the same name.

60. The Jongjá of the Purniah list (No. 128), is at Patná called Dengrá,[3] a name which in different parts of the country is given to several Cyprini.

61. The third kind of Dyángrá, or the Konghárí of the Purniah list (No. 132), is at Patná called *Gohámá.*[4]

62. The eel called Anhai in the Purniah list (No. 134), at Patná is called *Angdhai*[5] evidently the same name, but which orthography is right, I cannot take upon myself to say.

Oblong crustaceous fishes are abundant in the Ganges, and are of three sizes. One as large as a small lobster, is called Gorrá; a second, like a prawn, called Jhingá, is the best, and is the same as that mentioned in my account of Bhágalpur; the third and last, like a large shrimp, is called Echná.

ESTIMATE OF HOW FAMILIES IN THE PATNA DISTRICT AND ZILA BEHAR ARE FED.

FAMILIES	Patná city.	Fatwah.	Naubarpur.	Bákipur Jaiwar.	Sherpur.	Gayá.	Nawádá.	Shaikhpurá.	Daríápur.	Bárh.	Behar.	Helsá.	Hulásganj.	Jahánábád.	Dáúdnagar.	Arwal.	Vikram.
Have as much fish as they please, . .	1/64	100	—	150	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily have fish in the cheap season, but only occasionally in the dear, . .	48/64	16/64	24/64	16/64	32/64	16/64	16/64	24/64	24/64	16/64	8/64	16/64	48/64	16/64	8/64	16/64	16/64
What fish they can catch, . .	3/64	40/64	36/64	32/64	16/64	40/64	40/64	32/64	32/64	40/64	32/64	44/64	16/64	44/64	48/64	40/64	44/64
Reject fish, . .	12/64	8/64	4/64	16/64	16/64	8/64	8/64	8/64	8/64	8/64	4/64	4/64	500	4/64	16/64	8/64	4/64

[1] *Cyprinus sophore*, Ham. Buch. Fish. Ganges, p. 310, pl. 19, f. 86.

[2] *Cyprinus mola*, Ham. Buch. Fish. Ganges, p. 334, pl. 38, f. 92.

[3] *Cyprinus jogia*, Ham. Buch. Fish. Ganges, p. 326, MS. drawings No. 141.

[4] *Cyprinus gohama*. Ham. Buch. Fish. Ganges, p. 346, MS. drawings, No. 107, as *C. Dyangra gohama*.

[5] *Unibranchapertura cuchia*, Ham. Buch. Fish. Ganges, p. 16.

FISH AND FISHERIES OF SHAHABAD DISTRICT

EXCEPT on the banks of the Ganges, where there is a good supply from the middle of October to the middle of June, fish are everywhere very scarce, and, in general, of a very poor quality. The small channels between the Son and Ganges, near their junction, form the best fishery in the District, which gives a regular supply throughout the year. It belongs to one person, and has been separated from the property of the adjoining land. The fisheries in the main channel of the Ganges are free, but it is alleged that the Zamíndárs always take some fish without payment, whenever they can catch a boat; but this is not often. It would seem that this practice is pretty general on the Ganges; as from Patná to Calcutta, it is seldom that a fisherman's boat will approach any person that he suspects has authority. This I have heard attributed to their having been plundered and beaten by Europeans; but I can scarcely think that such is the case. The price of all the fish that an European wants, is so trifling an object, as to render it improbable that he should take any without payment. In the parts of the channel of the Ganges, which in the dry season contain no current, and which are here called Bhágar, the fisheries are private property annexed to the adjoining land, and are let.

In the Són, there are a good many fish, and their quality is excellent, but, except during the floods, when it is impracticable to fish in such an immense torrent, the water is so clear, that the usual methods by which the natives take fish, have little success, and Sáhib Zádá Singh preserves the fisheries on his part of the river for his own sport. The whole fisheries on the lower part of the Son, in the division of Arrah, are said to be let for Rs. 10 a year to one man; but he is said to have procured the lease through the favour of the Europeans, and the same protects him from all attempts to raise the

rent. Above this, as I have said, Sáhib Zádá reserves the fish for his own sport. When he fishes, he gives one-half of what is taken to the fishermen, and distributes the remainder among his friends and dependants. Higher up, the fishery in the stream of the Son is considered free; but in the heats of spring, there are branches which lose the stream, and yet contain many fish in deep pools, and are called Chharan. It is there only that the fishermen are, in general, successful, and they pay rent.

The other rivers are mere torrents, and contain very few fish, except in the floods, when many small ones ascend from the Ganges, and are caught as the rivers dry up towards the end of the rainy season. Most of the reservoirs become dry in December, so that any fish which they contain, are of the small wretched kinds, such as are usual in rice fields, and are here called by the generic name, Sidhri analgous to the term Punti, or Punthi, that is used further east.

The only supply, however, in most parts, is from the two last sources, and from tanks; but these are neither large nor numerous, and their fish, which are large, are usually preserved by the owners for their own use. The supply, from reservoirs and torrents, lasts only for about two months, commencing about the middle of October.

As I made no fixed residence in any part of the District, I had no opportunity of collecting an assortment of the fishes; but there can be no doubt, both from what I saw and from the similarity of situation, that they are nearly the same with those found in the District of Patná. I shall not therefore enter into a detail of the species, and shall only observe that the fish which the English call the Trout of the Son, is a species of Cyprinus, and is the same with the Gohá of the Purniah list (No. 99). In this District it is called *Vaghra*.[1]

The fishing tribes live still less part of their time by this profession than those of Behar, being prevented by similar interruptions, and a greater scarcity of fish. Near the Ganges there are about 1100 families, in which there may be 2000 able-bodied men, who have perhaps thirty boats employed in fishing. In the interior no boats are used for this purpose, and 400 families of actual fishers may contain 800 able-bodied men; but in most places the fish in reservoirs are caught by Musáhars, Chámárs and Dosádhs, who have no nets, and merely grope with a basket among the mud, as the water dries. The whole rent of the fisheries was said not to exceed Rs. 4000 a year.

[1] *Cyprinus goha*, Ham. Buch. Fish. Ganges, p. 275, MS. drawings, No. 126.

APPENDIX.

FISH AND FISHERS OF THE GORAKHPUR DISTRICT, N.W. PROVINCES.[1]

NOTWITHSTANDING the great number of rivers and ponds, the supply of fish is neither abundant nor good. This is partly owing to the want of skill in the fishermen, who are able to catch very few in the large or rapid rivers, where the fish is of a very good quality; and partly to the fish in the ponds and lakes being, in general, small and ill tasted. Even in the Bákhirá *jhil*, the finest piece of stagnant water, the rui looses most of his splendid green gold and silver, and becomes of a dirty sable hue, and such fish are, in general, considered not only as unpalatable, but as unwholesome. The crocodile also is very destructive, so that few fish of a large size are procurable; the smaller ones do not seem to be worth this monster's pursuit. The fisheries, of however little value they may be, are, however, private property, and many of them seem to have been given to the Rájás free of rent, as a means of subsistence, when they were deprived of most of their lands, as being either unable or unwilling to pay the revenue that has been demanded. These chiefs are, however, so jealous of their incomes being known, that in many places they alleged that they took nothing whatever, in others they acknowledged small presents given on every renewal of the lease, and in others, they admitted that the fishermen gave a share of what they caught; but it was only in Barhálganj that I could procure any account of what was actually paid for the rent of fisheries; thirty families were there stated to pay 556 rupees.

The fish are caught chiefly in the ponds, lakes, or small rivers as

[1] The following pages refer to other parts of India rather than to Lower Bengal. They are given here by way of Appendix, for the sake of easy reference by those who desire to find the whole information on the subject of Indian Fisheries in a collected form.

they become dry, and therefore are chiefly procured in the cold season. Many of them are caught with the basket or most simple kind of triangular net, stretched between two bamboos; many are also caught by narrow, semi-circular canals, dug so as to form a connection between the upper and lower part of a small river, across which a dam has been thrown, so that, as the waters retire, the fish must descend by the canal, in which they are secured by a basket or bag-net. This contrivance for catching fish is here called Boriyári. In Bákhirá *jhil*, which seems to be the largest body of water in which the natives attempt to fish, they use a long net, not above two feet wide. The mesh is pretty large, intended to admit and secure fish of from three to five pounds weight, for in this lake, few attain a greater size. One side of the net is held up by a row of dry reeds about two inches long, and as thick as a goose's quill. When the net is thrown into the water, the whole sinks slowly by the weight of the twine of which it is made, and it sinks in a vertical position, the reeds keeping the side on which they are from sinking so fast as the other. The net has a bamboo at each end, both to stretch it and to float the ends. It is let out slowly from the end of a canoe paddling gently along, and four or five nets are usually let out at the same time, parallel to each other, and near the same place, so that the fish, being disturbed in all directions, may strike into the nets with the more force. When the nets have been thrown out, the canoes paddle back to the end first thrown into the water, one man in each making a noise by rattling a paddle on the gunwale. The nets are then pulled into the canoes, and if any fish has stuck in the meshes as it approaches the side of the canoe in drawing the net, it is secured by a bag-net fastened to a hoop and pole. This large net is called Chaundhi. When I examined the process, although all the boats on the lake were assembled, we had little success; but there was a great tumult and noise, which probably scared away the fish. Circular casting nets, of the kind common in India, are a good deal used.

The fishermen of Nichlál use the Ijar bark to stupefy the fish. They make a strong infusion, and throw some of this on the surface of a river or lake. All the fish that come to the surface during the first night afterwards, are killed, and collected in the morning. The operation may be repeated in fifteen days. Many other plants are used for the purpose, but the exact form of the processes I did not learn.

In the northern part of the District, a principal demand for the fish seems to be from the mountaineers, who purchase both what is dried in the sun (*sidhli*) and in the smoke (*pakli*). The fish thus dried are small, and being far from well cured, are more or less putrescent. The people whom I saw purchasing, said that they were intended for the distant market of Málibhúm.

According to the statements which I received, 395 canoes are employed in fishing, and there are 1625 families of fishermen, besides eighty men in one of the divisions where the estimate was given in this manner, and not according to families. It was stated that in 702 of these families, there were 1325 men, and at this rate, the whole number of men will be 3147. Some fish only for two months, and a very few the whole year round; but according to the statements received for 1476 of the houses, the average rate of time for which the fishermen are supported by this employment, is four months and ten days in the year. We cannot allow that each person makes less than Rs. 2 a month, including the tear and wear of nets and canoes. The fish caught, therefore, must sell to the retailers for Rs. 27,274, besides as much as will pay the rent. If we were to judge by what Barhálganj pays, this would amount to about Rs. 30,000; but the actual sum levied from the fishermen, probably does not exceed the value of one-half of the fish taken, and as the rents of fisheries are usually farmed again and again, what actually reaches the pockets of the Rájás or other proprietors, is probably much less than Rs. 27,000. The fisheries in the main channel of the Ghaghrá and Gandakí are free, but very few can take fish in such extensive waters.

Farmers of the low tribes catch fish in their own rice fields as the water dries up; but entirely for their own use, and it is only such as fish for sale that pay any rent, although the farmers often give a share of what they take to their landlord.

Most of the kinds of fish found in this District, I have already had occasion to mention, but the names used here differ a good deal from those in Behar or Bengal. In the following list, therefore, I shall have little occasion to do more than to refer to my former account. It is far, I suspect, from complete, although for the last three weeks that I remained at Gorakhpur, not a new kind was brought to me by the men whom I employed, but as usual they are a very perverse people.

1. The *Gulá*[1] of this District is the species of Tetrodon, which in Rangpur (No. 1) is called Tenpá.

2. The *Galphulan*[2] is another Tetrodon, which in Purniah is called Kariyá-phokchá.

3. The *Vámách* is the species of Macrognathe called Vám in the account of Behar (No. 5).

4. The *Patayá* is the species called Páthi in Behar (No. 6).

5. The *Naktá* is the kind called Bhungrí in Behar (No. 7).

6. The *Gobius* called here *Ballá*,[3] is the Gullá of Behar (No. 8), but in Bhágalpur the name is written Bullá, although in Purniah as in Behar, the word commences with G.

7. The *Kotra*[4] is a species of Trichopode, which in Rangpur (No. 10) is called Sádá-khalishá.

8. The *Jolá*[5] is another kind which in Rangpur (No. 12) is called Lál-khalishá.

9. The *Garai*[6] is the Ophiocephale, called by the same name in Behar (No. 13.)

10. The *Charanga*[7] is the kind called Chengá in all the Districts hitherto surveyed, Behar (No. 12).

11. The *Charangchh*[8] is the species, which in the account of Rangpur (No. 17) is called Gajál.

12. The *Dhebárí*[9] is the Holocentre called Dhálo in Behar (No. 14).

13. The *Somhara*[10] is the Lutjan grimpeur of Lacepéde, called Kabai in Behar (No. 15).

14. The Small Centropome called Chándá in Rangpur (No. 22), is here called *Gurdi* and *Chándchula*.[11]

[1] *Tetrodon fluviatilis*, Ham. Buch. Fish. Ganges, p. 6, pl. 30, f. 1.

[2] *Tetrodon cutcutia*, Ham. Buch. Fish. Ganges, p. 8, pl. 18, f. 3.

[3] *Gobius giuris*, Ham. Buch. Fish. Ganges, p. 51, pl. 33, f. 15.

[4] *Tricopodus sota*, Ham. Buch. Fish. Ganges, p. 120, MS. drawings, No. 39, as *T. fuscus*.

[5] *Trichopodus lalius*, Ham. Buch. Fish. Ganges, p. 120, MS. drawings, No. 37, as *T. ruber*.

[6] *Ophiocephalus lata*, Ham. Buch. Fish. Ganges, p. 63, pl. 34, f. 18.

[7] *Ophiocephalus gachua*, Ham. Buch. Fish. Ganges, p. 68, pl. 21, f. 21.

[8] *Ophiocephalus marulius*, Ham. Buch. Fish. Ganges, p. 65, pl. 22, f. 19.

[9] *Labrus badis*, Ham. Buch. Fish. Ganges, p. 96, pl. 30, f. 32.

[10] *Coius cobojius*, Ham. Buch. Fish. Ganges, p. 98, pl. 13, f. 33.

[11] *Chanda nama*, Ham. Buch. Fish. Ganges, p. 109, pl. 39, f. 37.

15. The *Gurda-chendrá*[1] is another species which is the Sisrá of Behar (No. 18).

16. The *Chendrá*[2] is a third species of Centropome, which in Dinájpur is called Ráṅgá Chándá.

17. The Small Cobitis called Dari in Rangpur (No. 27) is here called *Bágáwa*.[3]

18. Another species called Bute in Rangpur (No. 30) is here called *Naktá*,[4] a name also given to a species of Macrognathe (No. 5).

19. A third kind called Bilturi in Rangpur (No. 33) is here called *Samuna*.[5]

20. The Silurus called Páptá[6] in Behar (No. 25) is here called *Bulayá*.

21. The kindred fish called Káni pábdá in Rangpur (No. 38) is here called *Ghuguti*.

22. The Silurus called Boyárí[7] in Behar (No. 24) is here called *Barhari*, a variation of the same name.

23. The other called Singhi[8] in Behar (No. 23) is here called *Singi*, no uniformity being observed in the orthography of words.

24. The Macropteronote called Mangrí in Behar (No. 22) is here called *Maguri*.[9]

25. The Malapterure called Kajoli in Rangpur (No. 42) is here called *Basanguti*.[10]

26. The species of Pimelode considered here as the prototype of the Indian Genus *Tengará*,[11] is that called *Korki* in Dinájpur (No. 50).

[1] *Chanda bogoda*, Ham. Buch. Fish. Ganges, p. 111, MS. drawings, No. 3, as *Centropomus bogoda*.

[2] *Chanda ranga*, Ham. Buch. Fish. Ganges, p. 113.

[3] *Cobitis dario*, Ham. Buch. Fish. Ganges, p. 354, pl. 29, f. 95.

[4] *Cobitis guntea*, Ham. Buch. Fish. Ganges, p. 353, MS. drawings, No. 58, as *C. gunte*.

[5] *Cobitis bilturio*, Ham. Buch. Fish. Ganges, p. 358, MS. drawings, No. 49, as *C. bilturi*.

[6] *Silurus canio*, Ham. Buch. Fish. Ganges, p. 151.

[7] *Silurus boalis*, Ham. Buch. Fish. Ganges, p. 154, pl. 29, f. 99.

[8] *Silurus singio*, Ham. Buch. Fish. Ganges, p. 147, pl. 37, f. 46.

[9] *Macropteronotus magur*, Ham. Buch. Fish. Ganges, p. 146, pl. 26, f. 45.

[10] *Malapterurus coila*, Ham. Buch. Fish. Ganges, p. 158.

[11] *Pimelodus tengara*, Ham. Buch. Fish. Ganges, p. 183, pl. 23, f. 60, where it is erroneously marked *P. batasius*, MS. drawings, No. 22, as *P. kurki*.

27. That in Dinájpur (No. 28) considered as the prototype of this genus, is here called *Bajaha.*[1]

28. *Tengra,*[2] considering the inaccurate manner in which the natives write, can scarcely be considered as a name different from Tengará, but the fish which was brought to me as the Tengrá, was the Pimelode, called Uruya in Dinájpur (No 54).

29. The Pimelode, called Pátharí in Rangpur (No. 49) is here called *Dhamasá.*[3]

30. The *Belaongdá*[4] of this District is also a Pimelode, and the name is no doubt the same with Belaundi of Behar (No. 33), but is here given to a species which differs very little from the Kengya of Rangpur (No. 46.) The differences are indeed so slight, that I consider them as varieties of the same species.

31. The *Tengar*[5] of this District, a name scarcely different from Tengará, is the same with the Belaundi of Behar (No. 33).

32. The *Baikar*[6] is another Pimelode, called Silon in Dinájpur (No. 55.) In this District it is said never to exceed six inches in length.

33. The *Pátharchatá,*[7] a name given to several fish that have no affinity to each other, is here applied to the Pimelode which in Purniah (No. 66) is called Hárá.

34. The *Tikui*[8] is a small species of Esox, which, in the vicinity of Calcutta, is called Panchak. It never exceeds two inches in length, and is very common in ditches.

35. The species of Esox, called Kauyal in Behar (No. 34), is here called Kauya,[9] a name not essentially different.

36. The *Sukaya*[10] is a species of Mugil, which in Rangpur (No. 69) is called Khaskhasiyá.

[1] *Pimelodus carcio,* Ham. Buch. Fish. Ganges, p. 181, pl. 3, f. 61, erroneously marked *P. tengara.*

[2] *Pimelodus urua,* Ham. Buch. Fish. Ganges, p. 177, MS. drawings, No. 15.

[3] *Pemelodus cavasius,* Ham. Buch. Fish. Ganges, p. 203, pl. 11, f. 67.

[4] *Pimelodus rama,* Ham. Buch. Fish. Ganges, p. 176, pl. 3, f. 55.

[5] *Pimelodus menoda,* Ham. Buch. Fish. Ganges, p. 203, pl. 1, f. 72, and in MS. drawings, No. 18, as *P. telgagra* and *menoda.*

[6] *Pimelodus silondia,* Ham. Buch. Fish. Ganges, p. 160, pl. 7, f. 50.

[7] *Pimelodus hara,* Ham. Buch. Fish. Ganges, p. 198, MS. Drawings, No. 12, as *P. hara.*

[8] *Esox panchax,* Ham. Buch. Fish. Ganges, p. 211, pl. 3, f. 69.

[9] *Esox cancila,* Ham. Buch. Fish. Ganges, p. 213, pl. 27, f. 70.

[10] *Mugil cascasia,* Ham. Buch. Fish. Ganges, p. 217, MS. drawings, No. 68, as *M. kaskasiya.*

37. The *Bághá*[1] is the Mugil, which in Rangpur (No. 70) is called Muji.

38. The Myste, which in Behar (No. 38) is called Kánbhuní, is here called Pátá.[2]

39. The term *Moe*,[3] used in Behar (No. 39) for the other myste of India, is known here also, but the *Niolá* is more common.

40. The *Somta*[4] is a species of Clupea, which in Dinájpur (No. 32) is called Telar.

41. The Clupanodon, called Chaprá in Behar (No. 42), is here called *Pharchi*.[5] It is found, not only in the rivers, but in the marshes or lakes of this District.

42. The *Sahiyá* is another small Clupanodon, called Karati in Dinájpur (No. 35).

43. The *Patuki*[6] is the fish allied to the Genus Cyprinus, which in Behar is called Gordá (No. 43).

44. The Layukuli of Rangpur (No. 84) is here called *Malhi*.[7]

45. The Layubuká of Rangpur (No. 83) is here called *Saphánd*.[8]

46. The Chhepká of Rangpur (No. 91) is here called *Jharaingi*.[9]

47. The Phulchelá of Rangpur (No. 82) is here called *Chalawá*.[10]

48. The Nariyali chelá of Rangpur (No 81) is here called *Kangsátá*.[11]

49. The Ghorá chelá of Rangpur (No. 80) is here called *Cheriyá*.[12] These three fishes, which have such a strong resemblance to each other, that almost everywhere else they have a generic name, have here names totally distinct.

[1] *Mugil corsula*, Ham. Buch. Fish. Ganges, p. 221, pl. 9, f. 97.

[2] *Mystus kapirat*, Ham. Buch. Fish. Ganges, p. 235.

[3] *Mystus chitala*, Ham. Buch. Fish. Ganges, p. 236, MS. drawing as *Mystus chitoi*, is now missing.

[4] *Clupea telara*, Ham. Buch. Fish. Ganges, p. 241, pl. 2, f. 72.

[5] *Clupanodon chapra*, Ham. Buch. Fish. Ganges, p. 248, MS. drawings, No. 89, as *C. chapra*.

[6] *Cyprinus cotio*, Ham. Buch. Fish. Ganges, p. 339, pl. 39, f. 93.

[7] *Cyprinus atpar*, Ham. Buch. Fish. Ganges, p. 259, MS. drawings, No. 142, as *C. layukuli*.

[8] *Cyprinus laubuca*, Ham. Buch. Fish. Ganges, p. 260, MS. drawings, No. 139, as *C. laubuca*.

[9] *Cyprinus devario*, Ham. Buch. Fish. Ganges, p. 341, pl. 6, f. 94.

[10] *Cyprinus phulo*, Ham. Buch. Fish. Ganges, p. 262, MS. drawings, No. 130, as *C. phulchela*.

[11] *Cyprinus bacaila*, Ham. Buch. Fish. Ganges, p. 265, pl. 8, f. 76.

[12] *Cyprinus gora*, Ham. Buch. Fish. Ganges, p. 263, MS. drawings, No. 146, as *C. gora*.

50. The Bukrángí of Rangpur (No. 86), is here in some places called *Tensi*, and in others, *Piyaruya*.[1]

51. The Elangá of Rangpur (No. 93) is here called *Arang*,[2] evidently another form of the same name.

52. The Bhángan of Rangpur (No. 95) is here called *Bukti*.[3]

53. The Vogá-bhángan of Rangpur (No. 98), in some parts here is called *Bhagná*,[4] evidently the same name with Bhángan, and in such parts it is considered as the prototype of this division of Cyprini, but in other parts it is called *Nayahi*.

54. The Mrigal of Bengal and Behar, Rangpur (No. 99), is here called *Naini*.[5]

55. The Rohit of Rangpur (No. 100) here, as wherever else the Hindi language prevails, is called *Rohu*.[6]

56. The Kálbasu of Rangpur (No. 108) is here called Kengya-chhari.[7]

57. The *Nándin*[8] of this District does not differ in any one point from the fish so called in Purniah, except in having three rays less in the dorsal fin, and, although the number of these bones is generally very little liable to variation, I can scarcely consider the fish of this District different from that of Purniah.

58. Very nearly allied to the above is another species of Cyprinus, which is here called the *Nánkár* and *Bakahi*,[9] nor have I seen it anywhere except in the rivers of this District. It never exceeds 3 or 4 lb. in weight.

59. The Kurchhá of Rangpur (No. 101) is here called *Kursi*,[10] and it must be observed that the names Kurchhá, Kurchi, and Kursi are all the same, variously spelt and pronounced in different places, and applied with little or no discrimination to several fishes that have a very strong resemblance to each other.

[1] MS. drawings, No. 104, as *Cyprinus bukrangi*.

[2] *Cyprinus elanga*, Ham. Buch. Fish. Ganges, p. 281, MS. drawings, No. 103, as *C. elanga*.

[3] *Cyprinus reba*, Ham. Buch. Fish. Ganges, p. 280.

[4] *Cyprinus boga*, Ham. Buch. Fish. Ganges, p. 286, pl. 28, f. 80.

[5] *Cyprinus mrigala*, Ham. Buch. Fish. Ganges, p. 279, pl. 6, f. 79.

[6] *Cyprinus rohita*, Ham. Buch. Fish. Ganges, p. 301, pl. 36, f. 85.

[7] *Cyprinus calbasu*, Ham. Buch. Fish. Ganges, p. 297, pl. 2, f. 83.

[8] *Cyprinus nandina*, Ham. Buch. Fish. Ganges, p. 300, pl. 8, f. 84.

[9] *Cyprinus nancar*, Ham. Buch. Fish. Ganges, p. 299.

[10] *Cyprinus cursa* and *cursis*, Ham. Buch. Fish. Ganges, pp. 290, 297. MS. drawings, No. 124.

60. The Kátal of Rangpur (No. 109) is here called *Bhakurá*.[1]

61. The Darangi of Rangpur (No. 110) is here called *Darai*,[2] a name perhaps not essentially different.

62. The Saran-punthi of Rangpur (No. 111) is here called *Daraki*,[3] a name also resembling the former, and the two fishes have indeed a strong resemblance.

63. The Koswatí of the Purniah list is here called *Tipui*.[4]

64. The Punthi of Rangpur (No. 112) is here called *Pothiyá*,[5] another orthography for the same name, and *Sahari*, which is perhaps a corruption of Saphari, the Sanskrit appellation.

65. The Tit-punthi[6] of Rangpur (No. 115) is here called *Chhota-pothiyá*.

66. The Phutuni-punthi of Rangpur (No. 118) is here called *Makui*.[7]

67. The Geli-punthi of Rangpur (No. 117) is here called *Phardahi*.[8]

68. The Kánchan-punthi of Rangpur (No. 116) is here called *Chaiti*.[9]

69. The Mauyá of Rangpur (No. 121) is here called *Dhayai*.[10]

70. The Anjáná of the Purniah list is here called *Dingrái*,[11] evidently the same name with Dengrá or Dyangrá, given in different places to this or other kindred species.

71. The Dangriká of the Dinájpur list, is here called *Dangruyá*,[12] another form of the same word.

72. The Dengrá of Patná (No. 60) is here called *Dingrawa*,[13] another form of the same name.

[1] *Cyprinus catla*, Ham. Buch. Fish. Ganges, p. 287, pl. 13, f. 81.

[2] *Cyprinus chagunio*, Ham. Buch. Fish. Ganges, p. 295.

[3] *Cyprinus sarana*, Ham. Buch. Fish. Ganges, p. 307.

[4] *Cyprinus cosuatis*, Ham. Buch. Fish. Ganges, p. 338, MS. drawings, No. 132, as *C. koswati*.

[5] *Cyprinus sophore*, Ham. Buch. Fish. Ganges, p. 310, pl. 19, f. 86.

[6] *Cyprinus ticto*, Ham. Buch. Fish. Ganges, p. 314, pl. 8, f. 87.

[7] *Cyprinus phutunio*, Ham. Buch. Fish. Ganges, p. 319, MS. drawings, No. 129.

[8] *Cyprinus gelius*, Ham. Buch. Fish. Ganges, p. 320, MS. drawings, No. 133.

[9] *Cyprinus conchonius*, Ham. Buch. Fish. Ganges, p. 317, MS. drawings, No. 96, as *C. korikon*.

[10] *Cyprinus mola*, Ham. Buch. Fish. Ganges, p. 334, pl. 38, f. 92.

[11] *Cyprinus anjana*, Ham, Buch. Fish. Ganges, p. 328, MS. drawings, No. 136, as *C. dyangra anjana*.

[12] *Cyprinus danrica*, Ham. Buch. Fish. Ganges, p. 325, pl. 16, f. 88.

[13] *Cyprinus jogia*, Ham. Buch. Fish. Ganges, p. 326, MS. drawings, No. 141.

73. The *Sutiha*[1] of this District is a small fish, very much resembling the last, but wanting the coloured stripe on the sides.

74. The Dhengro of Rangpur (No. 106) is here called *Rawá.*[2]

75 The Morul of Rangpur (No. 105) is here called *Chhahi.*[3]

76. The Angro of Rangpur (No. 104) is here called *Masuyar.*[4]

77. The Godiyárí of the Bhágalpur list is here called *Lamtá.*[5]

78. The Gohamá of the Behar list (No. 61) is here called *Garáa.*[6]

79. The *Mosayangr*[7] of this District seems scarcely sufficiently distinct from the Garáa, although the fishermen declared them different species, but, being idle and careless, they wished to give a number of names to render their want of industry less conspicuous.

[1] *Cyprinus sutiha*, Ham. Buch. Fish. Ganges, p. 327, MS. drawings, No. 143, *C. sutiha.*

[2] *Cyprinus dero*, Ham. Buch. Fish. Ganges, p. 277, pl. 22, f. 78.

[3] *Cyprinus morala*, Ham. Buch. Fish. Ganges, p. 331, pl. 22, f. 88.

[4] *Cyprinus angra*, Ham. Buch. Fish. Ganges, p. 331, MS. drawings, No. 118, as *C. angra.*

[5] *Cyprinus lamta*, Ham. Buch. Fish. Ganges, p. 343, MS. drawings, No. 105. as *C. godiyari.*

[6] *Cyprinus gohama*, Ham. Buch. Fish. Ganges, p. 346, MS. drawings, No. 107, as *C. dyangra gohama.*

[7] *Cyprinus mosario*, Ham. Buch. Fish. Ganges, p. 346.

CONCLUSION.

In the preceding pages, we have seen how the fisheries of the fresh waters of Bengal were worked half a century ago, and it now becomes necessary to investigate whether we are able to trace any novel modes of capture. As a rule, the native officials who have during the last few years reported on their present state, consider that the finny tribes have decreased, and that the markets are not supplied sufficiently to meet the demands of the people.

An insufficiently supplied fish market may of course be due to two causes, either (1) that the fish are not being captured, or else (2) that they are not present in the waters in sufficient numbers. From Dr Buchanan's account, we may reasonably infer that the fisheries in those days were, as a rule, pretty well stocked, but that the fishermen's trade was carried on in such a primitive way, or he was subject to such an amount of rent, or other imposts, that the fishermen caste generally preferred engaging in boating and river traffic.

MODES OF FISHING.

The various modes of fishing recorded by Dr Buchanan appear to be in existence still, with the exception of the "*dip nets.*" These have not been mentioned as now used in the Ganges, and I have not personally observed them, except on the Brahmaputra. We are told that they were primitive contrivances, and at the present day I only know of them being employed in the rivers of the western coast, Assam, and in Burmah, or where the supply of fish has not yet been materially diminished owing to one of the three following causes :— (1) Being within tidal influence, (2) due to the British not having possessed the country long enough to permit the fisheries being ruined, or (3) owing to their being such a sparse population, either they are unable to make much havoc amongst the finny tribes, or no market exists to sell more than a very moderate amount of fish.

The following modes now employed are either in excess of those

mentioned fifty years since, or certain additions have been made. I give them as they are recorded in "The Fresh Water Fisheries Report,"[1] under the heads of Oudh, N. W. Provinces, or Bengal :—

OUDH Under the Faizábád Commissioner "fishing is carried on *in rivers* from boats by casting and dragging nets, spears, lines, rods, and hooks ; in village ponds and jhils, in the months of Jaishtha and Baisákh (April, May, and June), by hand, the water being first mudded by gangs of from 50 to 60 men. Large fish are sometimes kined by clubs. The Tálukdár of Deogáon states that drains full of water are sometimes enclosed on both sides, and powders obtained from a poisonous wild fruit named "Bistend or Kuhár" thrown in. A channel is then cut to receive fresh-water in the enclosed drain, so as to save the fish from wholesale destruction. The large fish get disturbed (intoxicated or poisoned) and float, when people beat them on the head with clubs or catch them with their hands." But, he adds, the fish taken in this manner are not good to eat. In Unáo and Saudi very small fishes are destroyed during the rains, and cultivators use them as manure ; in the latter place the fry are sold in quantities for little or nothing, the smallest mesh of the nets will not pass a grain of barley.

N. W. PROVINCES.—In the Dún "breeding-fish are destroyed in great numbers, and small fry were, until lately, also largely captured. The breeding-fish are destroyed in the commencement of the rains in every conceivable manner ; they at that time run up small streams, and are there killed with sticks, caught in nets, in baskets, in temporary cruives, by hooks fastened in great numbers on to lines, and many other ways. Small fry are taken at the end of the rains in baskets placed in fields at the outlets for irrigation water ; in the cold weather small fry are caught in nets of all kinds having very small meshes. Streams are turned, the large fish taken out, and the small fry left to perish. Waters are poisoned by which fish of all sizes and kinds are destroyed." "Wasteful destruction of fish is carried on to a fearful extent ; the following are the chief modes :— from March to the beginning of the rains, streams are dammed and turned. In this District the mountain torrents, when they burst from the hills, have three or four different beds, all of which are full during the rains, but afterwards only one ; one year the stream is in one of these beds, another year in another, and so on. The poachers choose a spot where the stream and an old bed are in close proxi-

[1] Report on the Fresh Water Fisheries of India and Burmah, 1873.

mity; both have good pools in them; they fix nets right across the stream about a mile, or more, below this spot. First, nets with large meshes, and then nets with smaller meshes. These nets are kept down to the bottom with heavy stones. When the nets are all ready they dam up the stream, and open a water-way into the old bed; the force of the water soon cuts a deep way for itself, and then the late bed of the stream is left dry, except in the deep holes; all fish that try to escape down are stopped by the nets. The poachers then take away all the fish they want, and leave the rest to perish gradually as the pools dry up. I have sometimes seen small fry lying dead, six and eight inches deep, in these holes. The poachers, in a day or two, do the same thing somewhere else lower down, and after a month or so, when the fish have become accustomed to the new bed, they commence at the top again, and return the stream into its late bed, catching all the fish in the new bed, &c."

"The mahásirs commence to run up about the end of March or beginning of April. Like salmon and some other kinds of fish, they push their way up as high as they can get; the consequence is, that in June and July, you will see ten and fifteen pound fish in little streams not more than a yard wide; these are all heavy with spawn, and fall easy victims to poachers. In the hills in places where the streams run between narrow rocks, the natives fasten a series of strings with sharp strong barbed hooks every three inches; a vast number of fish are destroyed in this way. The hill-men also frequently poison the rivers. In the plains, at the commencement of the rains, fish rún up little streams and are easily caught. When the fish have run up and spawned, the young fry are caught in myriads at the outlet for irrigation water, in ricefields and elsewhere."

The Officiating Senior Assistant Commissioner of Kumáon, Major Fisher, remarked that "both breeding-fish and very young ones are destroyed in this District to a very great extent, so much so that the absence of them as an article of diet in the Almorá and Naini Tál markets, as compared with former years, is very noticeable, and it is a comparatively rare thing now to see good fish for breakfast, even at a European table. The destruction of fish and their absence now from some of our large rivers, such as the Sarju in the Eastern, and the Rámgangá in Western Kumáon, is equally noticeable. In parts of these rivers, where a good angler could take his six or eight fish a day, averaging from six to twelve pounds each, the same man would not now take two, although the angler of to-day has many

devices in the way of artificial baits, which the sportsman of former days had not. . . . . There are three or four ways of destroying young and large fish :—(1.) By a heavily leaded cast-net, the fishermen wading waist-deep into the stream to employ it. (2.) By the use of a stout cord thrown right across a stream ; to one end is attached a short stick for a man to hold, whilst the other end of the cord is held slackly by a man on the opposite bank. Then two men generally stand on commanding rocks, overlooking some deep pool where the current is not rapid. The cord itself is armed with large iron hooks at intervals of two or three feet, being each of them about the size of one used in a patent weighing machine. The cord, thus armed, is kept about eighteen inches or two feet, sometimes deeper, below the surface of the stream. Some men now go down below the pool, and with bamboos or poles stir up the fish from below, whilst, at the same time, the water from this process becomes muddy. The half-blinded and frightened fish make for the deep water of the pool above, and as they pass over the cord, the man holding the stick jerks the cord with great skill and strength, and many a fine fish is hooked by the gills or the tail, or through the lower portion of the stomach : as to the Kumáon it is immaterial how, so long as the fish is landed. This process not only destroys large numbers of fish, but wounds and injures very many others which go away only to die. (3.) By placing at intervals from three to four feet, on a weir used for irrigation purposes, conical-shaped baskets, the point of the cone being below, and the open mouth of the cone on a level with the weir. This device is chiefly successful at night. The baskets are generally placed in portions of the weir where the stream is strongest, and an unwary fish coming too close to the weir finds himself hurled into a basket from which it is quite impossible to escape. It is needless to point out how injurious this process of destruction is to the ascent of fish before the breeding season, and their descent when breeding is over ; practically, it requires a very clever fish to go up for breeding purposes, and return to the point started from uninjured, for it has to cross and re-cross several of these weirs both on its journey up and down stream."

The Officiating Senior Assistant Commissioner Garhwál, reported that almost all classes use fish as food when procurable. "The wholesale destruction of fish and their fry commences in these hills. The rivers and streams here are the breeding-grounds of the mahásir, kúlons or kálá-banj, and other fish which ascend them in

the rains to spawn. Not only are large fish destroyed on their upward and downward route, but the fry are caught wherever they are to be seen. Moreover, the rivers are so dammed up by weirs made on purpose to catch fish, that they cannot always ascend their spawning-grounds, and fall an easy prey to the people, who are on the watch for them. There are several modes of catching fish; the principal are netting; by weirs with one exit, at which a wicker basket or trawl is fixed; and by snagging, or, as it is called, the 'raksha;' fishing with rod and line is rarely practised. Netting is carried on at all times of the year, but chiefly during floods, when the water is dirty, and the fish come to the edge to feed, or when the water is very low indeed. Weirs are erected as soon as the monsoon begins to cease, and they remain in existence till carried away by the first floods in the rains. They are placed usually at the tail of each pool, and there is almost always one at the junction of two rivers, thus entirely preventing fish running up till the weir is carried away by a flood. Snagging is, in my opinion, by far the most uselessly destructive method. It is carried on as follows:—Two men, one on either bank of the stream, hold a long and strong line between them. To this are attached several large hooks, between each of which are fastened flat pieces of stick, so placed as to keep the hooks with the point upwards. The hooks are allowed to sink to the bottom, and when a fish, working his way up stream, comes over the hooks, the man on the higher bank jerks the line, and very frequently transfixes the fish. Of course, many fish must get away maimed; but I have seen numbers, amongst them mahásirs of 15 to 20 pounds weight, caught in one pool in this manner. All villagers living along the larger rivers pursue this method during the cold season when the water is clear, and very few large fish can escape them. Were it not for the damage done by maiming fish, it would not be so objectionable, as what are caught are eaten; but as it is, I think it a pernicious plan, and one which almost completely clears the fish out of the deep pools where they rest during the cold season." *Some villages have purchased the right to catch fish thus*, but they must be few. "That the number of fish is decreasing is well known and acknowledged, so much so, that the people living high up one of our rivers, an affluent of the Alaknandá, complained to me that owing to the number of weirs, they found that very few fish can find their way up as far as their villages. Being a fisherman myself, I too can testify that in some rivers where there used to be first-rate rod-fishing, it

has greatly deteriorated in the last few years, while the size of the fish has also decreased. The right of erecting weirs was not, I believe, carried on to the same extent in former days as now. They were not then so regularly or so generally made, and were not of the same impassable nature as those now erected. For I have seen some which none of the fish inhabiting these rivers could possibly pass. Besides, where a matter becomes one of public importance, as the preservation of fish is, surely the rights of private parties, especially when in the minority, ought to give way."

The Magistrate of Gorakpur observed on the destruction and waste of fish :—"It is sufficient to remark that the natives catch fish all the year round, at all times and in all places, without any regard to the spawning season and the mixture of the fry, to show that great destruction must be committed. Their greediness also in sparing nothing, however small, which can contribute towards a meal, is an equally strong evidence of waste. It is even said that the *málás* and *keuts* dig the spawn of fish out of the banks of rivers, and after preparing it in a certain manner, either consume it themselves, or offer it for sale. Small auxiliary waters are the chief scene of this destruction, and the chief agent is a dam, called *chilwán*, which is stretched across a stream, and catches all the fish, however small, which may descend, while at the same time it entirely interrupts their ascent. I have inspected two of these dams constructed in the *Rohan Nadí* at Domingarh, and have carefully examined their construction and operation. The dam *chilwán* resembles a screen made of common reed called *sarpat;* the reeds are so close together that the smallest fry can hardly get through, and the dam is further plastered at its foot with mud and strengthened with matting, *chatái*, so that no passage exists for anything. In mid-stream the screen opens into a long and narrow passage walled and floored with the same materials; and this terminates in a basket, named *katerá*, which is a hamper made of reeds, into which a small orifice in the side gives admittance to fish beneath the surface of the water, whilst the lid remains above the surface, and is opened from time to time for the removal of the spoil. As the water hardly finds its way through the interstices of the screen, it rushes in a strong current along the passage, carrying the fish with it, and a fall from the passage into the basket precludes all chance of escape. The months during which the greatest destruction of fry and small fish takes place are from July to September."

Mr Hobart reported of Bastí District :—"I remember the Koáná used to overflow its banks yearly, and millions of fish used to come into the quiet waters of the lagoons lying near the stream. There was a system of staking the mouths of those lagoons, when the water fell in the river at the end of the rains, as the fish tried to get away. Except the very large fish, which leaped the artificial barrier (and it was more than four feet above the water), the rest of the fish were slaughtered in tens of thousands, and an incalculable waste occurred. Had the fish been gradually killed and sold, the plan has its advantages; as it is, it requires restriction very badly. Again, in that same river, especially in the remote parts, there is a trap under every bridge that spans it, where fish are caught and slaughtered in numbers. I have never heard of poisoning being used as a means to capture fish there, but I remember seeing the stream poisoned naturally. At the end of the cold season some rain had fallen, and had washed the forest leaves into the water, which turned from this, or other cause, to a dull red colour. The fish sickened and died in thousands. On the up-stream side of each of the bridges and traps I have mentioned, you could see millions of fish eager to get down past the obstruction, and escape from the poisoned water. In a hundred yards or so, the river was a mass of living heads. The fish sickened and died in a day or two, and birds of prey came from all parts to devour them. I saw this myself, and heard that it was not of unfrequent occurrence, and that the dead fish were so numerous on these occasions that they were carted off as manure. This is certainly a crying evil and demands a remedy."

The Collector of (Muthurá) Muttra reported :—"I have seen much of the Ganges and Jamná canals that run through Mirat, and I know that in both, quantities of fish are annually destroyed when the canals are allowed to run off. I have watched the first rush of water let in, and have been astonished at the shoals of fish brought down by it. One instance I recollect. I was at the Masurí fall on the Ganges canal in the Mirat District, when I saw hundreds of mahásir come down; they were all carried over the fall, as they had been over a dozen higher up between that point and Hardwár, not one of which could by any possibility have got back again up the canal. Such a constantly recurring drain on the supply of fish in the head-waters has naturally produced a great diminution in the numbers of the species of fish, and as it is the one most generally taken by the Europeans, the loss is more apparent. But I have

little doubt that this injury to other descriptions of fish is equally great."

Taking the Mahásir simply as a sample of the fish destroyed in these irrigation canals, what must every observer behold? That they go down these large channels, but cannot return. It has been suggested that they might continue their descent, and thus find an exit at the lower end, but this they will not do. As the canal becomes shallower towards its termination, the falls are lower, the holes formed below them less deep, and there is not so much food, consequently they will not be found there This is not a theoretical opinion, but deduced from actual observation made when a canal was dried off. These canals are emptied at certain periods for repairs or other causes, and at this period many fish are left dry in the bed and are easily killed, but a large number retreat into the holes which exist and contain water. In some of these canals, a custom obtains to permit the employés to kill all they are able, in any manner they can; in other places this is more or less prohibited; whilst in some, the fishing is let out, and every living fish destroyed, no matter how small; and as none can ascend out of the canals, the destruction is enormous and sufficient to ruin any fisheries. "Dr Allen," of the 2nd Gorkhás, thus observed on these constructions:—"The fisheries are certainly decreasing as regards the number of fish, both in the Ganges and Jamná rivers. The chief cause of this, I believe, to be the drain on them caused by the canals. Mahásir, rohu, kálbasu, &c., abound in all the canals both from the Jamná and Ganges. The mahásir are very plentiful in the Jamná canal (Karnál branch, which runs down to Hánsí and Hissár) and in the Ganges canal. When these canals silt up, or the water is cut off from their head, for cleaning, repairing, or other purposes, hundreds of thousands of fish of all kinds and of all sizes are destroyed. When the water shallows sufficiently, men and boys go into it with sticks, and kill the fish in thousands, and this occurs every year. It must be very evident that so great a drain as this must decrease and injure the supply of fish in the main streams, as before the canals were cut, the whole of those now entering them remained in the Ganges and Jamná rivers and their tributary streams. The tributary streams may be netted and dammed, but such an amount of injury to the fishing from this cause would not happen in a series of years, as is produced in one year by the indiscriminate slaughter in the canals, when fish from a maund in weight downwards are destroyed through a hundred or more miles of country."

These canals thus form traps on a large scale wherein fish are destroyed wholesale whenever the water is cut off, and that this is not seldom, I adduce the following figures to prove. In the Eastern Jamná canal the number of times and days it has been without a supply of water are as follows :—

4 years ending	Dec.	31st,	1840.	No. of times closed,	58	No of days closed,	203
5	,,	,,	,,	1845	,,	,,	53	,,	,,	356
5	,,	,,	,,	1850	,,	,,	48	,,	,,	194
5	,,	,,	,,	1855	,,	,,	47	,,	,,	265
5	,,	,,	,,	1860	,,	,,	36	,,	,,	267
5	,,	,,	,,	1865	,,	,,	31	,,	,,	240
5	,,	,,	,,	1870	,,	,,	14	,,	,,	216

If we now examine as to the comparative number of days on which the canals have been closed, we find the longest period from 29th October 1845 to December 15th, 1845, or 47 days, and the shortest a single day, thus—

During the first	4	years	closures averaged	3½	days each.
,, next	5	,,	,,	6½	,,
,, ,,	5	,,	,,	4	,,
,, ,,	5	,,	,,	5½	,,
,, ,,	5	,,	,,	7½	,,
,, ,,	5	,,	,,	8	,,
,, ,,	5	,,	,,	15	,,

The frequent closure of canals must be destructive to fish, unless they are able to retire into deep holes or contiguous tanks, where they may remain quiet until the canal is refilled; but, of course, should the canal be left dry for very long periods, as over eight or ten days, the probabilities are, that the water will have become so foul that the fish will die. Out of 287 times this canal was closed between January 1837, and December 1870, we find as follows regarding the times closures occurred, with reference to the number of days—

From	0 to 10	days,	238	times.
,,	10 to 20	,,	31	,,
,,	20 to 30	,,	12	,,
,,	30 to 40	,,	3	,,
,,	40 to 50	,,	3	,,

In the Ganges canal, slaughtering all the fish, whenever it was closed, was carried on when I was there, the numbers of times and the days wherein such occurred during the last fifteen years being as follows :—

5 years ending December 31st,	1860.	No. of times closed,	3.	Days	27
5 „ „	1865	„ „	10	„	156
5 „ „	1870	„ „	7	„	160

Thus, in round numbers, this canal during the last five years has had six times more days without water than in the first five years under review; whilst the periods of time it has been kept dry have risen as follows:—

1st 5 years—No. of days dry at each closure,				9
2nd 5 „	„	„	„	15
3rd 5 „	„	„	„	23

Irrigation weirs have been erected across various rivers in the Panjáb, North-Western Provinces, Bengal, and Madras, in order to deflect a certain amount of water into canals constructed for its reception and dissemination. These weirs are usually built in the form of stone walls spanning the entire breadth of rivers, and consequently form an obstruction, arresting the upward and downward passage of fish that are endeavouring to migrate, whilst, should it be sufficiently high, it entirely prevents their passing. On the bed of the river in front of it, or on its down-stream face, there is generally a stone pavement termed "an apron," or this apron may be a gradual slope of rough or smooth stones extending from the summit of the walls to the bed of the river. Likewise on the up-stream face of these weir walls is a bandh of stones, of greater or lesser extent, sloping down to the bed of the river.

These irrigation weirs are of different forms, but all arrest the passage of fish, some temporarily, others entirely; and, as a consequence, those migrating down-stream often pass into the irrigation canals. These weirs have openings of varying sizes, termed "*under-sluices*," constructed for the purpose of permitting the surplus water passing through the body of the weir, and on a level with the lowest bed of the river; when rushing through with great velocity, it was expected large quantities of silt would be carried with it, keeping the general bed of the river washed out to its proper level. These under-sluices or complete gaps through the weirs are of different widths, and may be classed under two divisions: *first*, the long narrow ones in North-Western Provinces, and the Panjáb; and, *secondly*, the wide ones in use at Cattack, Midnapur, and on the Son River. These under sluices are kept closed, except when there is an excess of water, as during the monsoon months: those of the *Madras* or *narrow pattern* are from six to nine feet in width, and several yards in length; they

close by means of boards pushed down vertically into large wooden grooves, and these boards can be elevated, when it is desired to do so, by means of a capstan and windlass. As these narrow under-sluices are of many feet in length, there are generally two sets of grooves, one at each end, so that either can be made use of. These narrow under-sluices carry such a rush of water through them, that no Indian fish can ascend up when they are open.

Fish, which are attempting to pass weirs in the course of their ascent up rivers, are chiefly those who are in a breeding condition, and are trying to reach their natural spawning grounds. Thus, when near the sea, the shad or hilsá is the most valuable sort which becomes stopped by weirs without practicable passes, so they are unable to reach the only localities wherein their spawn or ova could come to maturity if deposited; they consequently have to drop it in the water below these weirs, and here it cannot be fertilised, but inevitably perishes. The same occurs with some of the large carps in the more northern rivers (as of the North-Western Provinces and the Panjáb) that are weired not far from the base of the Himálayas, the hilly streams of which are the natural breeding-places for some, as the mahásir, &c. They descend over them before the cold months, when the rivers above contain too little water, or are unsuited for their residence; and when attempting to return up-stream, find this stone wall an insuperable obstacle: thus their reproduction is likewise prevented.

Fish when heavy in roe are not so well able to jump any great heights as are some of the younger or barren ones. Standing at the period of freshes, on the bridge above one of the Madras weirs possessing these narrow under-sluices, it is interesting to see the numbers of fish, both large and small, which leap up against their walls: some strike against the piers of the bridge, others fall into the cascade descending over its summit; but though I have passed hours watching them, I never saw one clear these obstacles, although I have seen thousands attempting it. The only rational reason that I can adduce for the jumping against the insurmountable weir walls whilst the narrow under-sluices are open is because they find such to be impassible. Could they ascend through these, why do they not? When these fishes were netted, many, especially the large ones, were bruised and scaleless in places, evidently due to injuries caused during their frantic but unavailing efforts to surmount the wall, or ascend through the open but narrow under-sluices.

The *wide under-sluices*, such as exist in the weirs at Cattack and Midnapur, are constructed on an entirely different principle and pattern, forming free gaps of many yards in width, so that, when open, fish cannot have any difficulty in ascending through them.

These weirs likewise, it is stated, may be topped by fish during heavy floods, especially when the summit of their wall is several feet below the surface of the water. But they do not appear to do so, or why are the shad entirely stopped at the lower Kalerun one? As they ascend along the river's bed they find a wall and ascend to surmount it, but as they rise the strong current must take them backward down-stream, and thus they never reach its summit, which the muddy condition of the water prevents their seeing, for it is only during freshes that the wall is covered.

Besides the foregoing there are *irrigation canals* which have a bearing upon the fisheries of a District, and these may be divided (1) into those simply constructed for purposes of irrigation, or (2) those which are made for both irrigation and navigation. These canals in some places, as the Rorí one in Sind, are mere artificial streams. which, in some portions of their extent, exist in lieu of natural water-courses which have silted up. Here no great falls occur, and references to such are unnecessary. But irrigation canals, as a rule, are given off from one or both sides of a river, which has a stone weir thrown across it for the purpose of backing up the water to a given height. At the head of each of these canals are head sluices, where the amount of water entering can be regulated in accordance with local requirements, or entirely cut off if necessary.

Irrigation weirs constructed simply for irrigation are those in which boat-traffic cannot be also carried on, due to one or more vertical falls existing, which are too great to permit such. These falls, which are sufficient to prevent traffic, are mostly sufficient to entirely obstruct fish which have once descended over them from ever re-ascending. Such canals almost invariably have a high fall near their commencement, whilst below all overflows, and due to the action of descending water, are holes of a larger or smaller size in their bed, well adapted for feeding in, where large fish live and thrive so long as they are permitted. The further the distance from the canal head, and as the amount and rapidity of the flow of water decreases, the falls are usually less and these holes are smaller; still even there they are present, but are not so suitable for providing food for large fish. It will thus be seen that these canals form large

receptacles which may be turned into traps for all fish which once obtain an ingress, unless there are *tanks* connected with them into which they could retire when the water is cut off and they become dried, or else that the *holes* in their beds retain a sufficient supply during these periods, so that the fish may remain in safety until the water is re-admitted. For at certain times of the year it becomes necessary to drain off these canals to enable the engineer officers to ascertain what repairs are necessary, and unless the fish have a safe place to resort to they might be easily taken. But, unfortunately, in some canals it is, or has been, the custom to allow the employés to kill all the fish at this period, and thus a simple irrigation canal becomes a vast trap for destroying fish.

In *canals for both irrigation and navigation*, there are locks at every fall, that boats may be admitted and floated up to a higher level. At these locks I have observed that fish can obtain a passage up or down stream, so they will not be further alluded to.

None of these canals contain gratings or other appliances at their commencement for preventing the ingress of fish, and I have witnessed how, when water is re-admitted into these canals, shoals of fish are carried over falls up which none can re-ascend, and below which they are unable to breed. Thus the water is cut off and the contained fish destroyed, the canal to be again replenished with a supply from the river, to be again and again exterminated several times during the year; and a surprise is expressed that the fisheries are deteriorating. The oftener the canals are closed, and the longer the periods at each closing, the greater is the mischief. But from either side of these main canals are given off side ones for the purposes of irrigation; these, again, have no grating to prevent fish ascending them; they go up, but as they are mostly only filled every alternate week on either side, all that have gone up them invariably perish. In some Districts fixed traps are permitted in all these small water-courses.

In Bengal.—The Commissioner of the Rájsháhí Division observes that—"Some salted and dried fish is imported to the Division, especially to Rangpur and Dinájpur, from Dacca and Maimansinh. Except in Pabná, where there is a large trade in hilsá fish, there is no extensive fish trade to distant places in any Districts in the Division. The fish caught is almost wholly locally consumed, though it is not unfrequently the case that, in the cold season, the fish is carried to distant *háts* and markets for sale at some distance from the rivers. The supply of fish has fallen off from what it was some twenty years ago.

This is attributed to the destruction of the fry and the young fish and to the silting up of small rivers and *bils*. The supply having fallen off, and the demand being great, owing to increase of population, its price has also, as a matter of course, nearly doubled what it was before."

"There can be no doubt that the destruction of small fry must be enormous, not only in rivers, but in every paddy-field in Bengal; but I cannot say that I see my way to any feasible suggestions for the prevention of fish-catching in the rainy season all over Bengal."

These fry are *sold* for two purposes, (1) either alive for stocking tanks, or (2) dead as food. At the commencement of the century, it will have been observed, that although cultivators might capture some of these immature fish in their fields for their own consumption they had to pay a tax if they took any for sale. Now-a-days we do not hear that "vast multitudes flock into the reservoirs, ditches being in general cut to give them a passage as the waters retire," as Dr Buchanan observed used to be the case.

IN ASSAM.—The Deputy Commissioner of Darang observes—"There is good reason to suppose that the supply of fish is falling off. Fish has become of late years much dearer, the fisheries are falling in value, and many of the Dom fishermen are, in consequence, I believe, taking to agricultural pursuits. With, perhaps, the exception of some Márwárí merchants and some sepoys, fish would be consumed by all classes in this District could they get it, but, as it is, the supply by no means equals the demand. Fish is neither salted, dried, nor exported, but some is imported. Fish are neither put in tanks nor reared, but, on the contrary, all means are employed for their destruction and that of their spawn. Everything from a weir to a basket is used, and the meshes of nets are so small that no fry can escape. The fish never have rest, and must decrease in numbers. The only measure for conservation possible would be regulating the smallest size of the meshes permitted. The prevention of the destruction of the fry in the fields is a more serious consideration, as the people for years have procured daily meals from them, and to suddenly withdraw the privilege, even although it would be doubtless much to their eventual advantage, might cause discontent and trouble."

The Assistant Commissioner, Golághát, observes—"Many of the river fish, some of which attain a large size, come annually up the smaller streams and deposit their spawn, and the young ones of these

are during the rains dispersed over the surface of the country in rice-fields, swamps, drains, and ditches. These endeavour subsequently to make their way to the large rivers, but the dangers that beset them on the road are numerous. In the shallow waters in the rice-fields, women and children may be seen in crowds fishing with baskets called *jakai*, through the interstices of which a tadpole could not pass. Those that escape this danger, and, following the flow of the water, arrive at one of the innumerable dams separating the paddy fields, find their further progress barred by funnel-shaped bamboo traps called *khoká*, *chápá*, or *ghaní*, through which the water is made to pass, but whose outlets are so small that only the most minute fish can get through. Escaping to the smaller water-courses, their dangers seem to increase. The Assamese divide the channel into sections by erecting bándhs, and from one of these they proceed to bale out all the water, capturing every fish, large and small: they then dam up another portion and do likewise. The fish that finally arrive at the smaller rivers find their exit barred by weirs, which will let nothing pass; and, not content with this, the Assamese will sometimes resort to poison, employing for this purpose the fruit of a tree called 'Konibih.'"

Throughout the whole of the reports sent in, no such preserves of fish are recorded as those of Sáhib Zádá Singh in the Son, half a century ago. Dr Buchanan evidently foresaw impending a diminution of the supply of the fresh water fishes. He observed, "I am persuaded that a common property is, in general, neglected, and turns out of little or no advantage, either to the public or to individuals. In this District (Dinájpur) the property in the fisheries has, in many places, been separated from that of the adjacent land, which seems to me to be a great loss, as it is the proprietor of the neighbouring land alone that can take care, either of the fish or fishermen." He remarks that the Collector of Bhágalpur was pursuing the same disastrous course, whilst in Gorakhpur, they were being given away to Rájás, free of rent, as a means of subsistence.

In those days, the fishermen evidently had not the same immunities they have now. We hear that directly a fishing-boat was seen, it would be making away, as their occupants appear to have been generally plundered in the Ganges. The modes in which rents were paid, seem to have varied almost with each District. In some

places, tanks were kept in repair by fishermen, in return for their being allowed the contained fish. Raising a hovel on the banks of the Ganges, necessitated the payment of a high rent, not ostensibly, but in reality, for the fishing in its vicinity.

How are the markets supplied with fish at the present time, has been answered as follows :—"In the *North-West Provinces*, sufficiently in 13; insufficiently in 23; occasionally in 2; doubtful in 2. In *Oudh*, three-fourths of the markets have a larger demand than supply. In *Lower Bengal*, the returns show that the supply does not come up to the demand. We hear of fishermen being obliged to take to other occupation to earn a livelihood, and the reasons for this are apparently as follows :—

Respecting the present state of the fresh water fisheries throughout India, excluding Lower Bengal, Assam, Sind and Burmah, the following reports were received.

State of Indian Fresh-water Fisheries, 1871.

Province.	Increase.	Stationary.	Decrease.	Doubtful
Panjáb, . .	13	32	33	. .
N.-W. Provinces,	...	6	10	...
Oudh, . . .	8	10	2	1
Bombay, . .	...	..	generally decreased.	...
Haidarábád, .	...	...	ditto.	...
Mysore, . .	...	...	in the majority.	..
Madras, . .	6	12	46	

If the more destructive modes of taking fish, and the innovations now permitted are to be continued, what is to be expected except a continual decrease of the true fresh-water species, due to the incessant drain? And when the next famine spreads its blighting influence over the Delta of the Ganges, where will be the indigenous fish which might aid in preserving the lives of some few of the miserable but thoughtless people? Who will then be amongst the first to exclaim against the short-sightedness of their predecessors, who have allowed present greed to impoverish what should be a large reserve supply of food? What will then be said of the philanthropy of permitting this waste of to-day, or the wisdom of unheeding what might be required for a future year's supply?

But it must not be imagined that, in Bengal alone, the blighting influence of European non-regulation of fisheries is felt, for enquiries distinctly prove that it exists throughout the length and breadth of

India. One example, from Madras, may here be quoted. The rents of the entire fresh-water fisheries in that Presidency have dwindled down to an average of Rs. 80,000 (£8000) per annum.

Mr Nelson observes of the Madura District alone, "that the repair of tanks, or at all events the more important ones, seem to have been executed by Government, and to have been paid for out of the proceeds of the fishery of the tanks when drying up, and a letter, dated 1713, states that the fishing of a single tank provided occasionally 2000 crowns, and that the sums so realised were invariably applied to the execution of repairs."

The native officials of Madura (1872) report that "the local markets in large towns are not fully supplied with fish, and at certain seasons they are very scarce. During the season, the supply in many villages is sufficient, but more could always be sold in the larger towns." Eighty per cent. of the people would eat fish could they procure it.

The way in which the lower castes in this and the neighbouring District of Tinnevelly have now to supply themselves with animal food, is thus described in the *Madras Mail* (August 1873). Frogs are now used instead of fish! "All over the Districts of Madura and Tinnevelly, he says, the pariahs almost live on them, and thrive well. The frog most commonly in request is the green frog, called in the Támil language "pátchei taválei." Next in demand is the large croaking solitary frog, called "peria taválei;" and the "sori taválei," or spangled frog, is also eaten. The great delicacy, however, is the sand frog, or "manal taválei," and when these are procurable, the others are neglected. The frogs are generally cooked in the same way as fish, but the boys are content with simply disembowelling the frog, and roasting it for about five minutes before a fire."

It is further suggested, one can hardly believe in earnest, that attention should now be turned to the frogs for an increase in the food supply. Thus a deficiency is admitted, but nothing is suggested to arrest the present ruinous way the fisheries are being worked, which might, with care and attention, be amply sufficient for all local requirements. The frogs might be left to the otters, and as food for fish, instead of compelling human beings to have recourse to them as a means of subsistance, at periods when no scarcity or famine exists in the District, except in respect to the fish supply.

LIST OF THE PRINCIPAL PLANTS

GROWING IN

THE BENGAL PRESIDENCY AND ASSAM.

LIST OF BENGAL AND ASSAM PLANTS.

RANUNCULACEÆ

1 Clematis Cadmia, *Ham.*
2 —— Nepalensis, *Dc.*
3 —— montana, *Ham.*
4 —— acutangula, *Hf. and Th.*
5 —— smilacifolia, *Wall.*
6 —— Gauriana, *Roxb.*
7 —— puberula, *Hf. and Th.*
8 —— apiculata, *Hf. and Th.*
9 —— nutans, *Royle.*
10 —— acuminata, *Dc.*
11 —— connata, *Dc.*
12 —— Buchananiana, *Dc.*
13 —— grewiæflora, *Dc.*
14 Naravelia Zeylanica, *Dc.*
15 Anemone rupicola, *Camb.*
16 —— vitifolia, *Ham.*
17 —— Griffithii, *Hf. and Th.*
18 —— obtusiloba, *Don.*
19 —— rupestris, *Wall.*
20 —— trullifolia, *Hf. and Th.*
21 —— rivularis, *Ham.*
22 —— demissa, *Hf. and Th.*
23 —— polyanthes, *Don.*
24 —— elongata, *Don.*
25 Thalictrum elegans, *Wall.*
26 —— cultratum, *Wall.*
27 —— Chelidonii, *Dc.*
28 —— reniforme, *Wall.*
29 —— virgatum, *Hf. and Th.*
30 —— rutæfoliun., *Hf. and Th.*
31 Thalictrum rostellatum, *Hf. and Th.*
32 —— alpinum, *L.*
33 —— Punduanum, *Wall.*
34 —— saniculæforme, *Dc.*
35 —— Javanicum, *Bl.*
36 —— foliolosum, *Dc.*
37 —— minus, *L.*
38 Callianthemum Cachemirianum, *Camb.*
39 Ranunculus Cymbalariæ, *Pursh.*
40 —— pulchellus, *C. A. Mey.*
41 —— lobatus, *Jacq.*
42 —— hyperboreus, *Rott. C.*
43 —— affinis, *Br.*
44 —— nivalis, *L.*
45 —— sceleratus, *L.*
46 —— diffusus, *Dc.*
47 —— laetus, *Wall.*
48 —— Pensylvanicus, *L.*
49 —— flaccidus, *Hf. and Th.*
50 Oxygraphis glacialis, *Bunge.*
51 Caltha palustris, *L.*
52 —— scaposa, *Hf. and Th.*
53 Calathodes palmata, *Hf. and Th.*
54 Trollius pumilus, *Don.*
55 Coptis Teeta, *Wall.*
56 Isopyrum adiantifolium, *Hf. and Th.*
57 Aquilegia vulgaris, *L.*

58 Delphinium cœruleum, *Jacq.*
59 —— altissimum, *Wall.*
60 —— viscosum, *Hf. and Th.*
61 —— glaciale, *Hf. and Th.*
62 Aconitum uncinnatum, *L.*
63 —— luridum, *Hf. and Th.*
64 —— palmatum, *Don.*
65 —— ferox, *Wall.*
66 —— Napellus, *L.*
67 Actaea spicata, *L.*
68 Cimicifuga fœtida, *L.*

DILLENIACEÆ.

69 Delima sarmentosa, *L.*
70 Tetracera Assa, *Dc.*
71 Dillenia Indica, *L.*
72 —— aurea, *Sm.*
73 —— pilosa, *Roxb.*
74 —— scabrella, *Roxb.*
75 —— pentagyna, *Roxb.*

MAGNOLIACEÆ.

76 Euptelea pleiosperma, *Hf. and Th.*
77 Illicium Griffithii, *Hf and Th.*
78 Talauma Hodgsoni, *Hf and Th.*
79 —— Rabaniana, *Hf. and Th.*
80 Magnolia Campbellii, *Hf. and Th.*
81 —— globosa, *Hf. and Th.*
82 —— Griffithii, *Hf. and Th.*
83 —— sphenocarpa, *Roxb.*
84 Manglietia insignis, *Bl.*
85 —— Caveana, *Hf. and Th.*
86 Michelia Cathcartii, *Hf. and Th.*
87 —— Champaca, *L.*
88 —— excelsa, *Bl.*
89 Michelia alongiunsa, *Wall.*
90 —— Kisopa, *Ham.*
91 —— oblonga, *Wall.*
92 —— Punduana, *Hf. and Th.*
93 Schizandra grandiflora, *Hf. and Th.*
94 —— elongata, *Hf. and Th.*
95 —— axillaris, *Hf. and Th.*
96 Kadsura Roxburghiana, *Arn.*

ANONACEÆ.

97 Uvaria Hamiltoni, *Hf. and Th.*
98 —— bracteata, *Roxb.*
99 —— macrophylla, *Roxb.*
100 —— lurida, *Hf. and Th.*
101 Artabotrys caudatus, *Wall.*
102 —— suaveolens, *Bl.*
103 Unona Dunalii, *Wall.*
104 —— dumosa, *Roxb.*
105 —— Desmos, *Dun.*
106 —— discolor, *Vbl.*
107 —— praecox, *Hf. and Th.*
108 —— longiflora, *Roxb.*
109 Polyalthia longifolia, *Bth. and Hf.*
110 —— simiarum, *Bth. and Hf.*
111 —— cerasoides, *Bth. and Hf.*
112 —— Jenkinsii, *Bth. and Hf.*
113 —— suberosa, *Bth. and Hf.*
114 —— argentea, *Hf. and Th.*
115 Oxymitra fornicata, *Hf. and Th.*
116 Goniothalamus sesquipedalis, *Hf. and Th.*
117 —— Simmonsii, *Hf. and Th.*
118 Mitrephora tomentosa, *Hf. and Th.*

119 Anona squamosa, *L.*
120 —— reticulata, *L.*
121 Melodorum rubiginosum, *Hf. and Th.*
122 —— verrucosum, *Hf. and Th.*
123 —— bicolor, *Hf. and Th.*
124 —— Wallichii, *Hf. and Th.*
125 —— polyanthum, *Hf. and Th.*
126 —— rufinerve, *Hf. and Th.*
127 Miliusa macrocarpa, *Hf. and Th.*
128 —— Roxburghiana, *Hf. and Th.*
129 —— velutina, *Hf and Th.*
130 Saccopetalum longiflorum, *Hf. and Th.*
131 —— tomentosum, *Hf. and Th.*
132 Alphonsea ventricosa, *Hf. and Th.*
133 —— lutea, *Hf. and Th.*

MENISPERMACEÆ.

134 Aspidocarya uvifera, *Hf. and Th.*
135 Parabæna sagittata, *Miers.*
136 Tinospora tomentosa, *Miers.*
137 —— Malabarica, *Miers.*
138 —— crispa, *Miers.*
139 —— cordifolia, *Miers.*
140 Anamirta Cocculus, *Wa.*
141 Tiliacora racemosa, *Coleb.*
142 Limacia cuspidata, *Hf. and Th.*
143 Cocculus villosus, *Dc.*
144 —— mollis, *Wall.*
145 Pericampylus incanus, *Miers.*
146 Stephania hernandifolia.
147 Stephania elegans, *Hf. and Th.*
148 —— rotunda, *Lour.*
149 Cissampelos Pareira, *L.*
150 Cyclea peltata, *Hf. and Th.*
151 Lophophyllum bicristatum, *Griff.*
152 Pycnarrhena pleniflora, *Miers.*
153 Hæmatocarpus Thomsoni, *Miers.*

BERBERIDEÆ.

154 Decaisnea insignis, *Hf. and Th.*
155 Parvatia Brunoniana, *Dcne.*
156 Hollboellia latifolia, *Wall.*
157 Berberis Nepalensis, *Spreng.*
158 —— umbellata, *Wall.*
159 —— aristata, *Dc.*
160 —— Asiatica, *Roxb.*
161 —— Wallichiana, *Dc.*
162 —— insignis, *Hf. and Th.*
163 —— angulosa, *Wall.*
164 —— macrosepala, *Hf.*
165 —— concinna, *Hf.*
166 Podophyllum Emodi, *Wall.*

NYMPHÆACEÆ.

167 Brasenia peltata, *Pursh.*
168 Nymphæa Lotus, *L.*
169 —— stellata, *Willd.*
170 —— pygmæa, *Ait.*
171 Euryale ferox, *Salisb.*
172 Nelumbo nucifera, *Gaertn.*

PAPAVERACEÆ.

173 Papaver somniferum, *L.*
174 Argemone Mexicana, *L.*

175 Meconopsis simplicifolia, *Hf. and Th.*
176 —— horridula, *Hf. and Th.*
177 —— Nepalensis, *Dc.*
178 —— Wallichii, *Hook.*
179 Cathcartia villosa, *Hf.*

FUMARIACEÆ.

180 Hypecoum leptocarpum, *Hf. and Th.*
181 Dicentra torulosa, *Hf. and Th.*
182 —— Roylei, *Hf. and Th.*
183 —— thalictrifolia, *Hf. and Th.*
184 Corydalis ophiocarpa, *Hf. and Th.*
185 —— flaccida, *Hf. and Th.*
186 —— leptocarpa, *Hf. and Th.*
187 —— Cachemiriana, *Royle.*
188 —— polygalina, *Hf. and Th.*
189 —— juncea, *Wall.*
190 —— ramosa, *Wall.*
191 —— Sibirica, *Pers.*
192 —— chærophylla, *Dc.*

CRUCIFERÆ.

193 Parrya platycarpa, *Hf. and Th.*
194 Nasturtium palustre, *Dc.*
195 —— Indicum, *Dc.*
196 —— montanum, *Wall.*
197 Barbarea elata, *Hf. and Th.*
198 Arabis glandulosa, *Kar. and Kir.*
199 Cardamine violacea, *Wall.*
200 —— circæoides, *Hf. and Th.*
201 Cardamine trifoliolata, *Hf. and Th.*
202 —— hirsuta, *L.*
203 —— impatiens, *L.*
204 —— Griffithii, *Hf. and Th.*
205 —— elegantula, *Hf. and Th.*
206 —— macrophylla, *Willd.*
207 Loxostemon pulchellus. *Hf. and Th.*
208 Draba alpina, *L.*
209 —— elata, *Hf. and Th.*
210 —— incana, *L.*
211 —— lasiophylla, *Royle.*
212 —— Tibetica, *Hf. and Th.*
213 —— ellipsoidea, *Hf. and Th.*
214 —— gracillima, *Hf. and Th.*
215 Cochlearia alyssoides, *Dc.*
216 —— Himalaica, *Hf. and Th.*
217 —— scapiflora, *Hf. and Th.*
218 Lepidostemon pendunculosus, *Hf. and Th.*
219 Sisymbrium mollissimum, *C. A. Mey.*
220 —— Himalaicum, *Hf. and Th.*
221 —— Thalianum, *Gay. and Monn.*
222 —— lasiocarpum, *Hf. and Th.*
223 —— axillare, *Hf. and Th.*
224 —— deltoideum, *Hf. and Th.*
225 Eutrema Himalaicum, *Hf. and Th.*
226 Erysimum deflexum, *Hf. and Th.*
227 —— funiculosum, *Hf. and Th.*
228 —— pachycarpum, *Hf. and Th.*

229 Erysimum longisiliquum, *Hf. and Th.*
230 Braya rosea, *Bunge.*
231 Brassica nigra, *Koch.*
232 —— campestris, *L.*
233 —— trilocularis, *Hf. and Th.*
234 —— quadrivalvis, *Hf. and Th.*
235 —— juncea, *Hf. and Th.*
236 —— oleracea, *L.*
237 Capsella Bursa pastoris, *Moench.*
238 Lepidium sativum, *L.*
239 —— capitatum, *Hf. and Th.*
240 Thlaspi arvense, *L.*
241 —— alpestre, *L.*
242 —— cochlearioides, *Hf. and Th.*
243 Senebiera didyma, *Pers.*
244 Raphanus sativus, *L.*

CAPPARIDEÆ.

245 Cleome monophylla, *L.*
246 —— viscosa, *L.*
247 ——Chelidonii, *L. f.*
248 Gynandropsis pentaphylla, *Dc.*
249 Cratæva Roxburghii, *Br.*
250 —— unilocularis, *Ham.*
251 —— lophosperma, *Kz.*
252 —— Nurvala, *Ham.*
253 Capparis sepiaria, *L.*
254 —— pumila, *Champ.*
255 —— Assamica, *Hf. and Th.*
256 —— multiflora, *Hf. and Th.*
257 —— horrida, *L. f.*
258 —— olacifolia, *Hf. and Th.*
259 —— sabiæfolia, *Hf. and Th.*
260 —— viminea *Hf. and Th*
261 Capparis tenera, *Dalz.*
262 Roydsia suaveolens, *Roxb.*

VIOLACEÆ.

263 Viola biflora, *L.*
264 —— Patrini, *Dc.*
265 —— diffusa, *Ging.*
266 —— Hookeri, *T. Thoms.*
267 —— distans, *Wall.*
268 —— serpens, *Wall.*
269 Jonidium suffruticosum, *Ging.*
270 Alsodeia Roxburghii, *Wall.*
271 —— Bengalensis, *Wall.*
272 —— longiracemosa, *Kz.*

BIXINEÆ.

273 Cochlospermum Gossypium, *Dc.*
274 Bixa Orellana, *L.*
275 Flacourtia inermis, *Roxb.*
276 —— cataphracta, *Roxb.*
277 —— Ramontchi, *L'Her.*
278 —— sepiaria, *Roxb.*
279 Xylosma longifolium, *Clos.*
280 —— controversum, *Clos.*
281 Gynocardia odorata, *R. Br.*

PITTOSPOREÆ.

282 Pittosporum glabratum, *Lindl.*
283 —— humile, *Hf. and Th.*
284 —— floribundum, *W. A.*

POLYGALEÆ.

285 Polygala arillata, *Ham.*
286 —— triphylla, *Ham.*
287 —— crotalarioides, *Ham.*
288 —— leptalea, *Dc.*
289 —— persicariæfolia, *Dc.*

290 Polygala erioptera, *Dc.*
291 —— Chinensis, *L.*
292 —— Sibirica, *L.*
293 —— glomerata, *Lour.*
294 Salomonia Cantoniensis, *Lour.*
295 —— oblongifolia, *Dc.*
296 Securidaca inappendiculata, *Hassk.*
297 Xanthophyllum flavescens, *Roxb.*
298 —— virens, *Roxb.*

CARYOPHYLLEÆ.

299 Gypsophila cerastoides, *Don.*
300 Saponaria Vaccaria, *L.*
301 Silene conoidea, *L.*
302 —— Stracheyi, *Edg.*
303 —— Khasiana, *Rohr.*
304 Cucubalus bacciferus, *L.*
305 Lychnis apetala, *L.*
306 —— nigrescens, *Edg.*
307 —— Himalayensis, *Edg.*
308 —— brachypetala, *Hort. Berol.*
309 —— multicaulis, *Wall.*
310 —— nutans, *Bth.*
311 Cerastium vulgatum, *L.*
312 Stellaria crispata, *Wall.*
313 —— paniculata, *Edg.*
314 —— media, *L.*
315 —— Sikkimensis, *Hf.*
316 —— bulbosa, *Wulf.*
317 —— lanata, *Hf.*
318 —— longissima, *Wall.*
319 —— saxatilis, *Ham.*
320 —— uliginosa, *L.*
321 —— subumbellata, *Edg.*
322 —— depauperata, *Edg.*
323 Stellaria decumbens, *Edg.*
324 Brachystemma calycinum, *Don.*
325 Arenaria musciformis, *Wall.*
326 —— polytrichoides, *Edg.*
327 —— monticola, *Edg.*
328 —— pulvinata, *Edg.*
329 —— oreophila, *Hf.*
330 —— orbiculata, *Royle.*
331 —— ciliolata, *Edg.*
332 —— glanduligera, *Edg.*
333 —— melandryoides, *Edg.*
334 —— Benthami, *Edg.*
335 —— debilis, *Hf.*
336 Sagina procumbens, *L.*
337 Spergula arvensis, *L.*
338 —— pentandra, *L.*
339 Drymaria cordata, *Willd.*
340 Polycarpon Loefflingiæ, *Bth. and Hf.*
341 Polycarpæa corymbosa, *Lamk.*

PORTULACACEÆ.

342 Portulaca oleracea, *L.*
343 —— quadrifida, *L.*
344 —— tuberosa, *Roxb.*

TAMARISCINEÆ.

345 Tamari Gallica, *L.*
346 —— dioica, *Roxb.*
347 —— ericoides, *Rottl.*
348 Myricaria Germanica, *Desv.*

ELATINEÆ.

349 Bergia ammannioides, *Roxb.*
350 —— verticillata, *Willd.*

HYPERICINEÆ.

351 Ascyrum filicaule, *Dyer.*

352 Hypericum Griffithii, *Hf. and Th.*
353 —— triflorum, *Bl.*
354 —— patulum, *Thbg.*
355 —— tenuicaule, *Hf. and Th.*
356 —— reptans, *Hf. and Th.*
357 —— Sampsoni, *Hance.*
358 —— petiolulatum, *Hf. and Th.*
359 —— elodeoides, *Chois.*
360 —— Nepalense, *Chois.*
361 —— monanthemum, *Hf. and Th.*
362 —— Japonicum, *Thbg.*
363 —— Lalandii, *Chois.*
364 —— breviflorum, *Wall.*
365 Cratoxylon neriifolium, *Kz.*

GUTTIFERÆ.

366 Garcinia cornea, *L.*
367 —— Cowa, *Roxb.*
368 —— Kydia, *Roxb.*
369 —— lanceæfolia, *Roxb.*
370 —— pedunculata, *Roxb.*
371 —— Morella, *Desr.*
372 —— paniculata, *Roxb.*
373 —— atroviridis, *Griff.*
374 —— anomala, *Planch.*
375 —— stipulata, *T. And.*
376 —— Xanthochymus, *Hf.*
377 Calophyllum polyanthum, *Wall.*
378 Kayea floribunda, *Wall.*
379 Mesua ferrea, *L.*

TERNSTRŒMIACEÆ.

380 Ternstrœmia Japonica, *Thbg.*
381 Adinandra Griffithii, *Dyer.*
382 Cleyera ochnacea, *Dc.*
383 —— grandiflora, *Hf. and Th.*
384 Eurya Japonica, *Thbg.*
385 —— acuminata, *Dc.*
386 —— trichocarpa, *Korth.*
387 Actinidia callosa, *Ldl.*
388 —— strigosa, *Hf. and Th.*
389 Saurauja Nepalensis, *Dc.*
390 —— Griffithii, *Dyer.*
391 Saurauja fasciculata, *Wall.*
392 —— Punduana, *Wall.*
393 —— Khasiana, *Mig.*
394 —— cerea, *Griff.*
395 Stachyurus Himalaicus, *Hf. and Th.*
396 Schima Wallichii, *Chois.*
397 —— Khasiana, *Dyer.*
398 Pyrenaria barringtoniæfolia, *Seem.*
399 Gordonia excelsa, *Bl.*
400 Camellia Thea, *Lk.*
401 —— caudata *Wall.*
402 —— drupifera, *Lour.*
403 —— lutescens, *Dyer.*

DIPTEROCARPEÆ.

404 Dipterocarpus turbinatus, *Gaertn. f.*
405 —— pilosus, *Roxb.*
406 —— tuberculatus, *Roxb.*
407 —— scaber, *Ham.*
408 —— alatus, *Roxb.*
409 —— incanus, *Roxb.*
410 Ancistrocladus Wallichii, *Planch.*
411 Hopea scaphula, *Roxb.*
412 Vatica lanceæfolia, *Bl.*
413 Shorea robusta, *Gaertn. f.*
414 —— Assamica, *Dyer.*

MALVACEÆ.

415 Althæa rosea, *Cav.*

416 Malva verticillata, *L.*
417 Malvastrum tricuspidatum, *A. Gray.*
418 —— spicatum, *A. Gray.*
419 Sida humilis, *Willd.*
420 —— Mysorensis, *Willd.*
421 —— alba, *L.*
422 —— carpinifolia, *L.*
423 —— rhombifolia, *L.*
424 —— cordifolia, *L.*
425 Abutilon Indicum, *L.*
426 —— tomentosum, *Willd.*
427 Urena lobata, *L.*
428 —— repanda, *Roxb.*
429 Pavonia Zeylanica, *Willd.*
430 Dicellostyles jujubifolia, *Bth.*
431 Hibiscus Trionum, *L.*
432 —— Surattensis, *L.*
433 —— furcatus, *Roxb.*
434 —— radiatus, *Willd.*
435 —— micranthus, *L.*
436 —— Solandra, *L'Her.*
437 —— fragrans, *Roxb.*
438 —— scandens, *Roxb.*
439 —— macrophyllus, *Roxb.*
440 —— panduræformis, *Burm.*
441 —— vitifolius, *L.*
442 —— cannabinus, *L.*
443 —— Sabdariffa, *L.*
444 —— ficulneus, *L.*
445 —— pungens, *Roxb.*
446 —— Manihot, *L.*
447 —— tetraphyllus, *Roxb.*
448 —— Abelmoschus, *L.*
449 —— esculentus, *L.*
450 —— tiliaceus, *L.*
451 —— tricuspis, *Banks.*
452 —— Rosa Sinensis, *L.*
453 —— Syriacus, *L.*
454 Thespesia Lampas, *Dalz. and Gibs.*
455 —— populnea, *Corr.*
456 Gossypium herbaceum, *L.*
457 —— Barbadense, *L.*
458 Kydia calycina, *Roxb.*
459 —— glabrescens, *Mast.*
460 Bombax Malabaricum, *D.*
461 Eriodendron pentandrum, *Kz.*

STERCULIACEÆ.

462 Sterculia urens, *Roxb.*
463 —— fœtida, *L.*
464 —— villosa, *Roxb.*
465 —— Roxburghii, *Wall.*
466 —— armata, *Mast.*
467 —— coccinea, *Roxb.*
468 —— mollis, *Wall.*
469 —— parviflora, *Roxb.*
470 —— colorata, *Roxb.*
471 —— alata, *Roxb.*
472 Heritiera littoralis, *Dry.*
473 —— minor, *Roxb.*
474 —— macrophylla, *Wall.*
475 —— acuminata, *Wall.*
476 Reevesia Wallichii, *Br.*
477 —— pubescens, *Mast.*
478 Helicteres Isora, *L.*
479 —— plebeja, *Kz.*
480 —— spicata, *Colebr.*
481 Pterospermum acerifolium, *Willd.*
482 —— semisagittatum, *Ham.*
483 —— lanceæfolium, *Roxb.*
484 Eriolæna Hookeriana, *Willd.*
485 —— Candollei, *Wall.*
486 —— quinquelocularis, *Wight.*
487 Pentapetes phœnicea, *L.*

488 Melhania Hamiltoniana, *Wall.*
489 Melochia corchorifolia, *L.*
490 Waltheria Americana, *L.*
491 Abroma augusta, *L.*
492 Guazuma tomentosa, *Kth.*
493 Buettneria herbacea, *Roxb.*
494 —— aspera, *Colebr.*
495 —— pilosa, *Roxb.*

TILIACEÆ

496 Brownlowia lanceolata, *Bth.*
497 Grewia columnaris, *Sm.*
498 —— excelsa, *Vhl.*
499 —— tiliæfolia, *Vhl.*
500 —— Asiatica, *L.*
501 —— polygama, *Roxb.*
502 —— sapida, *Roxb.*
503 —— sclerophylla, *Wall.*
504 —— pilosa, *Lamk.*
505 —— multiflora, *Juss.*
506 —— lævigata, *Vhl.*
507 —— hirsuta, *Vhl.*
508 —— microcos, *L.*
509 Triumfetta pilosa, *Roth.*
510 —— rhomboidea, *Jacq.*
511 —— rotundifolia, *Lamk.*
512 —— annua, *L.*
513 Corchorus capsularis, *L.*
514 —— olitorius, *L.*
515 —— fascicularis, *Lamk.*
516 —— tridens, *L.*
517 —— acutangulus, *Lamk.*
518 Echinocarpus Sigun, *Bl.*
519 —— Assamicus, *Bth.*
520 —— sterculiaceus, *Bth.*
521 —— tomentosus, *Bth.*
522 —— dasycarpus, *Bth.*
523 Elæocarpus Ganitrus, *Roxb.*
524 —— serratus, *L.*
525 Elæocarpus floribundus, *Bl.*
526 —— robustus, *Roxb.*
527 —— cuneatus, *Wight.*
528 —— lanceæfolius, *Roxb.*
529 —— Sikkimensis, *Mast.*
530 —— aristatus, *Roxb.*
531 —— rugosus, *Roxb.*
532 —— Monocera, *Cav.*
533 —— acuminatus, *Wall.*
534 —— prunifolius, *Wall.*
535 —— Varunua, *Ham.*

LINACEÆ.

536 Linum usitatissimum, *L.*
537 Reinwardtia trigyna, *Planch.*
538 —— tetragyna, *Planch.*
539 Anisadenia saxatilis, *Wall.*
540 —— pubescens, *Griff.*
541 Erythroxylon Kunthianum, *Kz.*
542 Ixonanthes Khasiana, *Hf.*

MALPIGHIACEÆ.

543 Hiptage Madablota, *Gaertn.*
544 —— acuminata, *Wall.*
545 Aspidopterys Roxburghiana, *A. Juss.*
546 —— nutans, *Hf.*
547 —— tomentosa, *Juss.*

ZYGOPHYLLEÆ.

548 Tribulus cistoides, *L.*
549 —— terrestris, *L.*

GERANIACEÆ.

550 Geranium refractum, *Edg. and Hf.*
551 —— collinum, *MB.*
552 —— Grevilleanum, *Wall.*
553 —— Nepalense, *Sw.*

554 Geranium polyanthes, *Edg. and Hf.*
555 —— ocellatum, *Camb.*
556 Oxalis corniculata, *L.*
557 —— Acetosella, *L.*
558 —— Griffithii, *Edg. and Hf.*
559 Biophytum sensitivum, *Edg.*
560 —— Apodiscias, *Turcz.*
561 —— Reinwardtii, *Walp.*
562 Averrhoa carambola, *L.*
563 —— Bilimbi, *L.*
564 Impatiens Chinensis, *L.*
565 —— salicifolius, *Hf. and Th.*
566 —— radicans, *Bth.*
567 —— trilobata, *Colebr.*
568 —— flavida, *Hf. and Th.*
569 —— Balsamina, *L.*
570 —— bella, *Hf. and Th.*
571 —— latiflora, *Hf. and Th.*
572 —— pulchra, *Hf. and Th.*
573 —— fimbriata, *Hook.*
574 —— acuminata, *Bth.*
575 —— tripetala, *Roxb.*
576 —— Thomsoni, *Hf.*
577 —— sulcata, *Wall.*
578 —— spirifer, *Hf. and Th.*
579 —— serrata, *Bth.*
580 —— scabrida, *Dc.*
581 —— arguta, *Hf. and Th.*
582 —— discolor, *Dc.*
583 —— porrecta, *Wall.*
584 —— racemulosa, *Wall.*
585 —— Jurpia, *Ham.*
586 —— puberula, *Dc.*
587 —— bracteata, *Colebr.*
588 —— lævigata, *Wall.*
589 —— radiata, *Hf.*
590 —— insignis, *Dc.*
591 —— tingens, *Edg.*
592 —— longipes, *Hf. and Th.*
593 Impatiens urticifolia, *W. A.*
594 —— leptoceras, *Dc.*
595 —— laxiflora, *Edg.*
596 —— tuberculata, *Hf. and Th.*
597 —— tropæolifolia, *Griff.*
598 —— Cathcartii, *Hf.*
599 —— cymbifera, *Hf.*
600 —— Mishmiensis, *Hf.*
601 —— stenantha, *Hf.*
602 —— racemosa, *Dc.*
603 —— paludosa, *Hf.*
604 —— angustiflora, *Hf.*
605 —— depauperata, *Hf.*
606 Hydrocera triflora, *Wall.*

RUTACEÆ.

607 Boenninghausenia albiflora, *Meisn.*
608 Evodia triphylla, *Dc.*
609 —— fraxinifolia, *Hf.*
610 —— meliæfolia, *Bth.*
611 —— rutæcarpa, *Hf. and Th.*
612 Zanthoxylon acanthopodium, *Dc.*
613 —— alatum, *Roxb.*
614 —— Khasianum, *Hf.*
615 —— Hamiltonianum, *Wall.*
616 —— oxyphyllum, *Edg.*
617 —— Budrunga, *Dc.*
618 —— myriacanthum, *Wall.*
619 —— ovalifolium, *Wight.*
620 —— tomentellum, *Hf.*
621 Toddalia floribunda, *Wall.*
622 —— aculeata, *Pers.*
623 Acronychia pedunculata, *Mig.*
624 Skimmia Laureola, *Hf.*
625 Glycosmis pentaphylla, *Corr.*
626 —— cyanosperma, *Spreng.*

627 Atalantia monophylla, *Corr.*
628 —— caudata, *Hf.*
629 Triphasia trifoliolata, *Dc.*
630 Limonia acodissima, *L.*
631 Murraya exotica, *L.*
632 —— Koenigii, *Spreng.*
633 Clausena pentaphylla, *Dc.*
634 —— heptaphylla, *Wight and Arn.*
635 —— excavata, *Burm.*
636 —— suffruticosa, *Wt. & Arn.*
637 —— Wampi, *Blanco.*
638 —— Willdenowii, *W. A.*
639 Micromelum pubescens, *Bl.*
640 —— hirsutum, *Oliv.*
641 Paramignya monophylla, *Wight.*
642 —— citrifolia, *Oliv.*
643 —— angulata, *Kz.*
644 Luvunga scandens, *Ham.*
645 Citrus decumana, *L.*
646 —— medica, *L.*
647 —— aurantium, *L.*
648 —— nobilis, *Loar.*
649 —— Hystrix, *Dc.*
650 Feronia elephantum, *Corr.*
651 Ægle Marmelos, *Corr.*

SIMARUBEÆ.

652 Ailanthus excelsa, *Roxb.*
653 Picrasma Javanica, *Bl.*
654 —— quassioides, *Benn.*
655 —— Nepalensis, *Benn.*
656 Brucea Sumatrana, *Roxb.*
657 —— mollis, *Wall.*
658 Balanites Roxburghii, *Planch.*

OCHNACEÆ.

659 Ochna squarrosa, *Lamk.*
660 —— pumila, *Ham.*

BURSERACEÆ.

661 Boswellia thurifera, *Colebr.*
662 Garuga pinnata, *Roxb.*
663 Balsamodendron Roxburghii, *Arn.*
664 Bursera serrata, *Wall.*
665 Canarium Bengalense, *Roxb.*

MELIACEÆ.

666 Munronia Wallichii, *Wight.*
667 Melia Azedarach, *L.*
668 —— composita, *Willd.*
669 —— Azadirachta, *Juss.*
670 Cipadessa baccifera, *Bl.*
671 Dysoxylon procerum, *Hiern.*
672 —— binectariferum, *Hf.*
673 —— Hamiltonii, *Hiern.*
674 Chisocheton paniculatum, *Hiern.*
675 —— pallens, *Hiern.*
676 Aglaia edulis, *A. Gray.*
677 —— Roxburghiana, *W. A.*
678 —— Khasiana, *Hiern.*
679 —— Wallichii, *Hiern.*
680 —— perviridis, *Hiern.*
681 Amoora Chittagonga, *Miq.*
682 —— decandra, *Hiern.*
683 —— Rohituka, *Roxb.*
684 —— cucullata, *Roxb.*
685 Walsura robusta, *Roxb.*
686 —— tubulata, *Hiern.*
687 Heynea trijuga, *A. Juss.*
688 Carapa obovata, *Juss.*
689 Chickrassia tabularis, *Juss.*
690 Cedrela Toona, *Roxb.*
691 Soymida febrifuga, *Juss.*

CHAILLETIACEÆ.

692 Chailletia gelonioides, *Roxb.*

OLACINEÆ.

693 Olax scandens, *Roxb.*
694 —— acuminata, *Wall.*
695 —— nana, *Wall.*
696 —— imbricata, *Roxb.*
697 Daphniphyllopsis capitata, *Kz.*
698 Erythropalum scandens, *Bl.*
699 —— vagum, *Mast.*
700 Anacalosa ilicoides, *Mast.*
701 Schoepfia fragrans, *Wall.*
702 —— acuminata, *Wall.*
703 Lepionurus sylvestris, *Bl.*
704 Gomphandra axillaris, *Wall.*
705 Stemonurus longifolius, *Miers.*
706 Jodes Thomsoniana, *Baill.*
707 —— Hookeriana, *Baill.*
708 Miquelia Kleinii, *Meisn.*
709 Natsiatum herpeticum, *Ham.*
710 Cardiopteris lobata, *Wall.*

ILICINEÆ.

711 Ilex Griffithii, *Hf.*
712 —— theæfolia, *Wall.*
713 —— godayam, *Wall.*
714 —— venulosa, *Wall.*
715 —— dipyrena, *Wall.*
716 —— odorata, *Ham.*
717 —— Sikkimensis, *Kz.*
718 —— insignis, *Hf.*
719 —— excelsa, *Wall.*
720 —— embelioides, *Hf.*
721 —— Thomsoni, *Hf.*
722 —— intricata, *Hf.*
723 —— fragilis, *Hf.*
724 Daphnephyllum Himalaiense, *Mnell.*

CELASTRINEÆ.

725 Evonymus bullatus, *Wall.*
726 —— echinatus, *Wall.*
727 —— theæfolius, *Wall.*
728 —— fimbriatus, *Wall.*
729 —— Hamiltonianus, *Wall.*
730 —— attenuatus, *Wall.*
731 —— grandiflorus, *Wall.*
732 —— glaber, *Roxb.*
733 —— nitidus, *Bth.*
734 —— pendulus, *Wall.*
735 —— frigidus, *Wall.*
736 —— cinereus, *Laws.*
737 —— vagans, *Wall.*
738 Microtropis discolor, *Wall.*
739 Lophopetalum fimbriatum, *Wight.*
740 Celastrus acuminatus, *Wall.*
741 —— Thomsoni, *Kz.*
742 —— emarginatus, *Willd.*
743 —— monospermus, *Wall.*
744 —— rufus, *Wall.*
745 —— stylosus, *Wall.*
746 —— venulosus, *Wall.*
747 —— attenuatus, *Wall.*
748 —— paniculatus, *Willd.*
749 —— neglectus, *Wall.*
750 —— salicifolius, *Laws.*
751 —— rugulosus, *Laws.*
752 Kurrimia robusta, *Kz.*
753 Elæodendron glaucum, *Pers.*
754 Hippocratea lanceolata, *Ham.*
755 —— Indica, *Willd.*
756 —— arborea, *Roxb.*
757 —— grandiflora, *Wall.*
758 —— obtusifolia, *Roxb.*
759 Salacia prinoides, *Dc.*
760 —— Roxburghii, *Wall.*

761 Salacia Jenkinsii, *Kurz.*
762 —— floribunda, *Wight.*

RHAMNACEÆ.

763 Ventilago calyculata, *Ful.*
764 Zizyphus Jujuba, *Lam.*
765 —— xylopyra, *Willd.*
766 —— glabra, *Roxb.*
767 —— funiculosa, *Ham.*
768 —— incurva, *Roxb.*
769 —— rugosa, *Lamk.*
770 —— œnoplia, *Mill.*
771 —— glabrata, *Heyne.*
772 —— vulgaris, *Lamk.*
773 —— apetala, *Hf.*
774 Berchemia flavescens, *Brongn.*
775 —— floribunda, *Brongn.*
776 —— lineata, *Dc.*
777 Rhamnus Nepalensis, *Wall.*
778 Hovenia dulcis, *Thbg.*
779 Sageretia hamosa, *Brongn.*
780 Colubrina Asiatica, *Brongn.*
781 Gouania Nepalensis, *Wall.*
782 —— leptostachya, *Brongn.*
783 —— Nepalensis, *Wall.*

AMPELIDEÆ.

784 Vitis bracteolata, *Wall.*
785 —— oxyphylla, *Wall.*
786 —— tuberculata, *Wall.*
787 —— muricata, *Wall.*
788 —— lanceolaria, *Roxb.*
789 —— campylocarpa, *Kz.*
790 —— elongata, *Wall.*
791 —— angustifolia, *Roxb.*
792 —— pedata, *Roxb.*
793 —— serrulata, *Roxb.*
794 —— capreolata, *Don.*
795 —— tenuifolia, *W. A.*
796 Vitis Japonica, *Thbg.*
797 —— trifoliata, *L.*
798 —— Teysmanni, *Miq.*
799 —— auriculata, *Roxb.*
800 —— repens, *W. A.*
801 —— planicaulis, *Hook.*
802 —— spectabilis, *Kz.*
803 —— Linnæi, *Kz.*
804 —— latifolia, *Roxb.*
805 —— pentagona, *Kz.*
806 —— discolor, *Moq.*
807 —— quadrangularis, *Wall.*
808 —— adnata, *Roxb.*
809 —— tomentosa, *Heyre.*
810 —— lanata, *Roxb.*
811 —— barbata, *Wall.*
812 —— Himalayana, *Royle.*
813 —— Mukorossi, *Gaertn.*
814 —— rubifolia, *Wall.*
815 —— flexuosa, *Thbg.*
816 —— neurosa, *Kz.*
817 —— Assamica, *Laws.*
818 —— Sikkimensis, *Laws.*
819 —— nervosa, *Laws.*
820 —— montana, *Laws.*
821 —— glandulosa, *Wall.*
822 —— angustifolia, *Roxb.*
823 —— obtecta, *Wall.*
824 —— Thomsoni, *Laws.*
825 —— obovata, *Laws.*
826 —— rumicisperma, *Laws.*
827 Leea macrophylla, *Roxb.*
828 —— gigantea, *Griff.*
829 —— sambucina, *L.*
830 —— læta, *Wall.*
831 —— alata, *Edg.*
832 —— crispa, *L.*
833 —— aspera, *Wall.*
834 —— Sundaica, *Miq.*
835 —— robusta, *Roxb.*

836 Leea æquata, *L.*
837 —— parallela, *Wall.*
838 —— trifoliata, *Laws.*

SAPINDACEAE.

839 Cardiospermum Halicacabum, *L.*
840 Erioglossum edule, *Bl.*
841 Schmiedelia glabra, *Roxb.*
842 —— serrata, *Dc.*
843 —— villosa, *Wight.*
844 —— aporetica, *Wall.*
845 —— chartacea, *Kurz.*
846 Æsculus Punduana, *Wall.*
847 Cupania glabrata, *Kz.*
848 —— Roxburghii, *Wight.*
849 —— Sumatrana, *Miq.*
850 Schleichera trijuga, *Willd.*
851 Sapindus verticillatus, *Roxb.*
852 —— Danura, *Voigt.*
853 —— emarginatus, *Vbl.*
854 —— detergens, *Roxb.*
855 Nephelium Litchi, *L.*
856 —— Griffithianum, *Kz.*
857 —— attenuatum, *Planch.*
858 —— rubrum, *Walp.*
859 —— rimosum, *Walp.*
860 —— longana, *Lamk.*
861 Harpullia cupanioides, *Roxb.*
862 Acer oblongum, *Wall.*
863 —— lævigatum, *Wall.*
864 —— Campbelli, *Hf. and Th.*
865 —— pectinatum, *Wall.*
866 —— caudatum, *Wall.*
867 —— Thomsoni, *Miq.*
868 —— niveum, *Bl.*
869 —— Sikkimense, *Miq.*
870 —— Hookeri, *Miq.*
871 —— stachyophyllum, *Hiern.*
872 —— pictum, *Thbg.*
873 Dobinæa vulgaris, *Ham.*
874 Turpinia pomifera, *Wall.*
875 —— Nepalensis, *Wall.*

SABIACEÆ.

876 Sabia limonacea, *Wall.*
877 —— lanceolata, *Colebr.*
878 —— leptandra, *Hf. and Th.*
879 —— purpurea, *Hf. and Th.*
880 —— parviflora, *Wall.*
881 —— campanulata, *Wall.*
882 Meliosma simplicifolia, *Roxb.*
883 —— pinnata, *Planch.*
884 —— Wallichii, *Planch.*
885 —— dilleniifolia, *Bl.*

ANACARDIACEÆ.

886 Rhus acuminata, *Dc.*
887 —— semialata, *Dc.*
888 Mangifera Indica, *L.*
889 —— sylvatica, *Roxb.*
890 Buchanania latifolia, *Roxb.*
891 Tapiria hirsuta, *Kz.*
892 Odina wodier, *Roxb.*
893 Semecarpus acuminatus, *Kz.*
894 —— Anacardium, *L.*
895 Drimycarpus racemosus, *Bth. and Hf.*
896 Spondias pinnata, *Kz.*

CONNARACEÆ.

897 Rourea santaloides, *W. A.*
898 —— caudata, *Planch.*
899 —— commutata, *Planch.*
900 Connarus monocarpus, *L.*

MORINGACEÆ.

901 Moringa pterygosperma, *Dc.*

LEGUMINOSÆ.

902 Piptanthus Nepalensis, *Don.*
903 Thermopsis barbata, *Royle.*
904 Heylandia latebrosa, *Dc.*
905 Crotalaria prostrata, *Roxb.*
906 —— humifusa, *Grah.*
907 —— aicularis, *Ham.*
908 —— ferruginea, *Grah.*
909 —— hirsuta, *Willd.*
910 —— alata, *Roxb.*
911 —— retusa, *L.*
912 —— sericea, *Retz.*
913 —— Assamica, *Bth.*
914 —— verrucosa, *L.*
915 —— ramosissima, *Roxb.*
916 —— juncea, *L.*
917 —— tetragona, *Roxb.*
918 —— calycina, *Schrank.*
919 —— sessiliflora, *L.*
920 —— occulta, *Grah.*
921 —— Mysorensis, *Bth.*
922 —— albida, *Heyne.*
923 —— dubia, *Grah.*
924 —— linifolia, *L.*
925 —— laburnifolia, *L.*
926 —— medicaginea, *Dc.*
927 —— luxuriana, *Bth.*
928 —— striata, *Dc.*
929 —— bracteata, *Roxb.*
930 —— quinquefolia, *L.*
931 Priotropis cytisoides, *W. A.*
932 Parochetus communis, *Ham.*
933 Trigonella fœnum græcum, *L.*
934 —— corniculata, *L.*
935 Medicago lupulina, *L.*
936 Melilotus officinalis, *Willd.*
937 —— albus, *Desf.*
938 Trifolium pratense, *L.*
939 —— repens, *L.*
940 Lotus Arabicus, *L.*
941 Psoralea corylifolia, *L.*
942 Cyamopsis psoralioides, *Dc.*
943 Indigofera linifolia, *Retz.*
944 —— enneaphylla, *L.*
945 —— viscosa, *Lam.*
946 —— trifoliolata, *L.*
947 —— Trita, *L. f.*
948 —— tinctoria, *L.*
949 —— cœrulea, *Roxb.*
950 —— pulchella, *Roxb.*
951 —— atropurpurea, *Ham.*
952 —— arborea, *Roxb.*
953 —— galegoides, *Dc.*
954 —— hebepetala, *Bth.*
955 —— hirsuta, *L.*
956 —— stachyoides, *Ldl.*
957 —— bracteata, *Wall.*
958 —— heterantha, *Wall.*
959 —— Dosua, *Ham.*
960 —— leptostachya, *Dc.*
961 Tephrosia candida, *Dc.*
962 —— macrophylla, *Wall.*
963 —— tinctoria, *Pers.*
964 —— villosa, *Pers.*
965 —— amœna, *E. Mey.*
966 —— diffusa, *W. A.*
967 —— purpurea, *Pers.*
968 Milletia racemosa, *Bth.*
969 —— pachycarpa, *Bth.*
970 —— caudata, *Kz.*
971 —— cinerea, *Bth.*
972 —— macrophylla, *Bth.*
973 —— monticola, *Kz.*
974 —— fruticosa, *Bth.*
975 —— piscidia, *Bth.*
976 —— pulchra, *Kz.*
977 Sesbania Ægyptiaca, *Pers.*
978 —— aculeata, *Pers.*
979 —— paludosa, *Jacq.*

980 Sesbania grandiflora, *Pers.*
981 —— procumbens, *W. A.*
982 Caragana crassicaulis, *Royle.*
983 Guldenstædtia uniflora, *Bth.*
984 —— Sikkimensis, *Bth.*
985 Astragalus pycnorrhizus, *Bth.*
986 —— rigidulus, *Bth.*
987 —— Sikkimensis, *Bth.*
988 —— lessertioides, *Bth.*
989 —— floridus, *Bth.*
990 —— Khasianus, *Bth.*
991 —— xiphocarpus, *Bth.*
992 —— stipulatus, *Don.*
993 —— leucocephalus, *Grah.*
994 —— tenuicaulis, *Bth.*
995 Hedysarum Sikkimense, *Bth.*
996 Æschynomene Indica, *L.*
997 —— aspera, *L.*
998 Smithia sensitiva, *L.*
999 —— conferta, *Sm.*
1000 —— ciliata, *Royle.*
1001 —— blanda, *Wall.*
1002 —— grande, *Bth.*
1003 Arachis hypogæa, *L.*
1004 Zornia diphylla, *Pers.*
1005 Ougeinia dalbergioides, *Bth.*
1006 Desmodium laburnifolium, *Bth.*
1007 —— Kulhaitense, *C. B. Clarke.*
1008 —— oxyphyllum, *Dc.*
1009 —— confertum, *Dc.*
1010 —— cephalotes, *Wall.*
1011 —— triquetrum, *Dc.*
1012 —— latifolium, *Dc.*
1013 —— gangeticum, *Burm.*
1014 —— ormocarpoides, *Dc.*
1015 Desmodium diffusum, *Dc.*
1016 —— recurvatum, *Ham.*
1017 —— concinnum, *Dc.*
1018 —— laxiflorum, *Dc.*
1019 —— gyrans, *Dc.*
1020 —— gyroides, *Dc.*
1021 —— polyarpum, *Dc.*
1022 —— trichocaulon, *Dc.*
1023 —— retroflexum, *Dc.*
1024 —— Griffithianum, *Bth.*
1025 —— amœnum, *Wall.*
1026 —— podocarpum, *Dc.*
1027 —— reniforme, *Dc.*
1028 —— floribundum, *Don.*
1029 —— dasylobum, *Miq.*
1030 —— triflorum, *Dc.*
1031 —— paroifolium, *Dc.*
1032 —— pulchellum, *Bth.*
1033 Uraria lagopodioides, *Dc.*
1034 —— alopecuroides, *Wight.*
1035 —— Lagopus, *Dc.*
1036 —— hamosa, *Wall.*
1037 —— picta, *Desf.*
1038 —— crinita, *Desf.*
1039 Lourea Vespertilionis, *Desv.*
1040 Pycnospora hedysaroides, *Bth.*
1041 Alysicarpus vaginalis, *Dc.*
1042 —— bupleurifolius, *Dc.*
1043 —— monilifer, *Edg.*
1044 —— quadrangularis, *Edg.*
1045 —— longifolius, *W. A.*
1046 —— Wallichii, *Wall.*
1047 Lespedeza elegans, *Camb.*
1048 —— juncea, *Pers.*
1049 —— elliptica, *Bth.*
1050 —— paniculata, *Royle.*
1051 —— eriocarpa, *Bth.*
1052 —— Thomsoni, *Bth.*
1053 Cicer arietinum, *L.*

1054 Vicia sativa, *L.*
1055 —— hirsuta, *L.*
1056 Lens esculentum, *Moench.*
1057 Lathyrus sativus, *L.*
1058 —— Aphaca, *L.*
1059 Pisum sativum, *L.*
1060 Abrus precatorius, *L.*
1061 —— pulchellus, *Wall.*
1062 Clitoria Ternatea, *L.*
1063 —— Mariana, *L.*
1064 Dumasia villosa, *Dc.*
1065 —— leiocarpa, *Bth.*
1066 —— cordifolia, *Bth.*
1067 —— congesta, *Dc.*
1068 Shuteria vestita, *W. A.*
1069 Glycine Soya, *S. and Z.*
1070 Teramnus labialis, *Spreng.*
1071 —— mollis, *Bth.*
1072 —— flexilis, *Bth.*
1073 Erythrina Indica, *Lamk.*
1074 —— stricta, *Roxb.*
1075 —— tomentosa, *Ham.*
1076 —— ovalifolia, *Roxb.*
1077 —— sublobata, *Roxb.*
1078 —— arborescens, *Roxb.*
1079 Apios carnea, *Bth.*
1080 Mucuna pruriens, *Dc.*
1081 —— capitata, *Dc.*
1082 —— macrocarpa, *Wall.*
1083 —— atropurpurea, *Dc.*
1084 —— imbricata, *Roxb.*
1085 —— monosperma, *Roxb.*
1086 —— gigantea, *Dc.*
1087 Butea frondosa, *Roxb.*
1088 —— minor, *Wall.*
1089 —— superba, *Roxb.*
1090 —— paroiflora, *Roxb.*
1091 Mastersia Assamica, *Bth.*
1092 Pueraria tuberosa, *Dc.*
1093 —— Thomsoni, *Bth.*
1094 Pueraria peduncularis, *Grah.*
1095 —— Wallichii, *Dc.*
1096 —— composita, *Grah.*
1097 —— ferruginea, *Kz.*
1098 —— phaseoloides, *Bth.*
1099 —— subspicata, *Bth.*
1100 Canavalia turgida, *Grah.*
1101 —— obtusifolia, *Dc.*
1102 —— virosa, *W. A.*
1103 —— ensiformis, *Dc.*
1104 —— dolichoides, *Kurz.*
1105 —— tetragona, *Kurz.*
1106 —— lucens, *Kz.*
1107 —— grandis, *Kurz.*
1108 Phaseolus vulgaris, *L.*
1109 —— lunatus, *L.*
1110 —— aureus, *Roxb.*
1111 —— semierectus, *L.*
1112 —— Truxillensis, *H. B. K.*
1113 —— trilobus, *L.*
1114 —— sublobatus, *Roxb.*
1115 —— aconitifolius, *Jacq.*
1116 —— trinervius, *Heyne.*
1117 —— radiatus, *L.*
1118 —— mungo, *L.*
1119 Vigna vexillata, *Bth.*
1120 —— gangetica, *Kz.*
1121 —— pilosa, *Kz.*
1122 —— calcarata, *Kz.*
1123 —— lutea, *A. Gray.*
1124 —— Sinensis, *Savi.*
1125 —— Catjan, *Bth.*
1126 Pachyrrhizus angulatus, *Rich.*
1127 Psophocarpus tetragonolobus, *Dc.*
1128 Dolichos Lablab, *L.*
1129 —— uniflorus, *Lamk.*
1130 —— cultratus, *Thbg.*

1131 Cajanus Indicus, *Spreng.*
1132 Dunbaria conspersa, *Bth.*
1133 Atylosia scarabæoides, *Bth.*
1134 —— elongata, *Bth.*
1135 —— platycarpa, *Bth.*
1136 —— mollis, *Bth.*
1137 —— calycina, *Miq.*
1138 Cylista scariosa, *Ait.*
1139 Rhynchosia minima, *Dc.*
1140 —— vestita, *Bth.*
1141 —— rufescens, *Bth.*
1142 —— suaveolens, *Dc.*
1143 Eriosæma Chinense, *Vog.*
1144 Flemingia congesta, *Roxb.*
1145 —— semialata, *Roxb.*
1146 —— prostata, *Roxb.*
1147 —— nana, *Roxb.*
1148 —— involucrata, *Bth.*
1149 —— stricta, *Roxb.*
1150 —— latifolia, *Bth.*
1151 —— paniculata, *Wall.*
1152 —— lineata, *Roxb.*
1153 —— strobilifera, *Ait.*
1154 —— chappar, *Ham.*
1155 —— bracteata, *Roxb.*
1156 Dalbergia rimosa, *Roxb.*
1157 —— latifolia, *Roxb.*
1158 —— Sissoo, *Roxb.*
1159 —— confertiflora, *Bth.*
1160 —— velutina, *Bth.*
1161 —— tamarindifolia, *Roxb.*
1162 —— Assamica, *Bth.*
1163 —— lanceolaria, *L.*
1164 —— volubilis, *Roxb.*
1165 —— stipulacea, *Roxb.*
1166 —— flexuosa, *Grah.*
1167 —— monosperma, *Dalz.*
1168 —— spinosa, *Roxb.*
1169 —— paniculata, *Roxb.*
1170 —— stenocarpa, *Kurz.*
1171 Pterocarpus Marsupium, *Roxb.*
1172 Derris scandens, *Bth.*
1173 —— robusta, *Bth.*
1174 —— uliginosa, *Bth.*
1175 —— elegans, *Bth.*
1176 —— ferruginea, *Bth.*
1177 —— marginata, *Bth.*
1178 —— discolor, *Bth.*
1179 —— cuneifolia, *Bth.*
1180 —— polystachya, *Bth.*
1181 —— acuminata, *Bth.*
1182 —— microptera, *Bth.*
1183 —— thyrsiflora, *Bth.*
1184 Pongamia glabra, *Vt.*
1185 Dalhousiea bracteata, *Wall.*
1186 Ormosia acuminata, *Grah.*
1187 Sophora acuminata, *Bth.*
1188 Mezoneuron cucullatum, *W. A.*
1189 —— enneaphyllum, *W. A.*
1190 Cæsalpinia Bonducella, *Flem.*
1191 —— Nuga, *Ait.*
1192 —— tortuosa, *Roxb.*
1193 —— digyna, *Roxb.*
1194 —— sepiaria, *Roxb.*
1195 —— pulcherrima, *Sw.*
1196 Acrocarpus fraxinifolius, *Wight.*
1197 Poinciana regia, *Boj.*
1198 Parkinsonia aculeata, *L.*
1199 Cassia Fistula, *L.*
1200 —— nodosa, *Ham.*
1201 —— bicapsularis, *L.*
1202 —— occidentalis, *L.*
1203 —— Sophora, *L.*
1204 —— hirsuta, *L.*
1205 —— Tora, *L.*
1206 —— multijuga, *Rich.*

1207 Cassia Siamea, *Lamk.*
1208 —— Timorensis, *Dc.*
1209 —— alata, *L.*
1210 —— glauca, *Lamk.*
1211 —— Absus, *L.*
1212 —— pumila, *Lamk.*
1213 —— mimosoides, *L.*
1214 Bauhinia acuminata, *L.*
1215 —— racemosa, *Lamk.*
1216 —— scandens, *Roxb.*
1217 —— nervosa, *Bth.*
1218 —— purpurea, *L.*
1219 —— variegata, *L.*
1220 —— Malabarica, *Roxb.*
1221 —— retusa, *Roxb.*
1222 —— rufa, *Bth.*
1223 —— Vahlii, *W. A.*
1224 —— tomentosa, *L.*
1225 —— rufescens, *Bth.*
1226 —— anguina, *Roxb.*
1227 Afzelia bijuga, *A. Gray.*
1228 Tamarindus Indica, *L.*
1229 Saraca Indica, *L.*
1230 Cynometra bijuga, *Span.*
1231 Parkia biglobosa, *Grah.*
1232 —— Brunonis, *Grah.*
1233 Entada Purshæta, *Dc.*
1234 Adenanthera pavonina, *L.*
1235 Neptunia oleracea, *Lour.*
1236 —— plena, *Bth.*
1237 Desmanthus virgatus, *Willd.*
1238 Mimosa rubicaulis, *Lam.*
1239 —— pudica, *L.*
1240 Leucæna glauca, *Bth.*
1241 Acacia Farnesiana, *Bth.*
1242 —— Arabica, *Willd.*
1243 —— tomentosa, *Willd.*
1244 —— Catechu, *Willd.*
1245 —— Sundra, *Roxb.*
1246 Acacia Suma, *Ham.*
1247 —— ferruginea, *Dc.*
1248 —— rugata, *Ham.*
1249 —— concinna, *Dc.*
1250 —— oxyphylla, *Grah.*
1251 —— Intsia, *Willd.*
1252 —— cæsia, *W. A.*
1253 —— pennata, *Willd.*
1254 Albizzia lucida, *Bth.*
1255 —— umbrosa, *Bth.*
1256 —— Lebbeck, *Bth.*
1257 —— odoratissima, *Bth.*
1258 —— procera, *Bth.*
1259 —— myriophylla, *Bth.*
1260 —— amara, *Boiv.*
1261 —— stipulata, *Boiv.*
1262 Pithecolobium dulce, *Bth.*
1263 —— bigeminum, *Mart.*
1264 —— lobatum, *Bth.*
1265 —— angulatum, *Bth.*
1266 —— montanum, *Bth.*

ROSACEAE.

1267 Prunus triflora, *Roxb.*
1268 —— Puddum, *Roxb.*
1269 —— punctata, *Wall.*
1270 —— Jenkinsii, *Wall.*
1271 —— capricida, *Wall.*
1272 —— Padus, *Dc.*
1273 —— integerrima, *Wall.*
1274 —— rufa, *Wall.*
1275 —— acuminata, *Wall.*
1276 —— ferruginea, *Wall.*
1277 —— Nepalensis, *Ser.*
1278 —— Persica, *L.*
1279 Maddenia Himalaica, *Hf. and Th.*
1280 Pygeum lucidum, *T. And.*
1281 —— acuminatum, *Colebr.*
1282 —— arboreum, *Ldl.*

1283 Prinsepia utilis, *Royle.*
1284 Spiræa canescens, *Don.*
1285 —— callosa, *Thbg.*
1286 —— Aruncus, *L.*
1287 Neillia thyrsiflora, *Don.*
1288 —— rubiflora, *Don.*
1289 Rubus rugosus, *Sm.*
1290 —— paniculatus, *Sm.*
1291 —— pyrifolius, *Sm.*
1292 —— acuminatus, *Sm.*
1293 —— oxyphyllus, *Wall.*
1294 —— lineatus, *Riodl.*
1295 —— pentagonus, *Wall.*
1296 —— calycinus, *Wall.*
1297 —— parvifolius, *L.*
1298 —— Thomsoni, *Fock.*
1299 —— nutans, *Wall.*
1300 —— macilentus, *Camb.*
1301 —— biflorus, *Ham.*
1302 —— niveus, *Wall.*
1303 —— flavus, *Ham.*
1304 —— rosæfolius, *L.*
1305 —— lasiocarpus, *Sm.*
1306 —— ferox, *Wall.*
1307 —— Assamensis, *Focke.*
1308 —— hibiscifolius, *Focke.*
1309 —— Hookeri, *Focke.*
1310 —— lucens, *Focke.*
1311 Fragaria Indica, *Andr.*
1312 —— vesca, *L.*
1313 —— Sikkimensis, *Kurz.*
1314 Potentilla fruticosa, *L.*
1315 —— meifolia, *Wall.*
1316 —— microphylla, *Don.*
1317 —— polyphylla, *Wall.*
1318 —— fulgens, *Wall.*
1319 —— leuconota, *Wall.*
1320 —— pedunc-ularis, *Don.*
1321 —— Kleiniana, *W. A.*
1322 —— argyrophylla, *Wall.*
1323 Potentilla monanthes, *Wall.*
1324 —— supina, *L.*
1325 —— procumbens, *L.*
1326 —— purpurea, *Royle.*
1327 —— albifolia, *Wall.*
1328 Agrimonia Eupatorium, *L.*
1329 Sanguisorba decandra, *Wall.*
1330 Rosa involucrata, *Roxb.*
1331 —— semperflorens, *L.*
1332 —— sempervirens, *L.*
1333 —— Brunonis, *Ldl.*
1334 —— sericea, *Ldl.*
1335 —— centifolia, *L.*
1336 —— Indica, *L.*
1337 Pyrus Indica, *Wall.*
1338 —— baccata, *L.*
1339 —— Pashia, *Ham.*
1340 —— granulosa, *Bert.*
1341 —— cuspidata, *Bertol.*
1342 Sorbus Sikkimensis, *Wenzig.*
1343 —— crenata, *Don.*
1344 —— lanata, *Don.*
1345 —— foliosa, *Wall.*
1346 —— microphylla, *Wenzig.*
1347 Photinia integrifolia, *Ldl.*
1348 —— arguta, *Wall.*
1349 —— Bengalensis, *Roxb.*
1350 Eriobotrya Japonica, *Ldl.*
1351 —— macrocarpa, *Kurz.*
1352 Cotoneaster acuminata, *Ldl.*
1353 —— nummularia, *Fisch and Mey.*
1354 —— bacillaris, *Wall.*
1355 —— frigida, *Wall.*
1356 —— microphylla, *Wall.*
1357 Stranvæsia glaucescens, *Ldl.*

SAXIFRAGEÆ.

1358 Saxifraga ligulata, *Wall.*
1359 —— purpurascens, *Hf. and Th.*
1360 —— imbricata, *Royle.*
1361 —— hemisphærica, *Hf. and Th.*
1362 —— strigosa, *Wall.*
1363 —— micrantha, *Edg.*
1364 —— pallida, *Wall.*
1365 —— flagellaris, *Willd.*
1366 —— pilifera, *Hf. and Th.*
1367 —— Brunonis, *Wall.*
1368 —— brachypoda, *Don.*
1369 —— fimbriata, *Wall.*
1370 —— hispidula, *Don.*
1371 —— palpebrata, *Hf. and Th.*
1372 —— cordigera, *Hf. and Th.*
1373 —— saginoides, *Hf. and Th.*
1374 —— aristulata, *Hf. and Th.*
1375 —— Lychnitis, *Hf. and Th.*
1376 —— nutans, *Hf. and Th.*
1377 —— viscidula, *Hf. and Th.*
1378 —— corymbosa, *Hf. and Th.*
1379 —— diversifolia, *Wall.*
1380 —— latiflora, *Hf. and Th.*
1381 —— umbellulata, *Hf. and Th.*
1382 —— Jacquemontiana, *Done.*
1383 —— Stella aurea, *Hf. and Th.*
1384 —— perpusilla, *Hf. and Th.*
1385 Chrysosplenium Nepalense, *Don.*
1386 —— alternifolium, *L.*
1387 Chrysosplenium carnosum, *Hf. and Th.*
1388 —— lanuginosum, *Hf. and Th.*
1389 —— Griffithii, *Hf. and Th.*
1390 Tiarella polyphylla, *Don.*
1391 Astilbe rivularis, *Ham.*
1392 —— rubra, *Hf. and Th.*
1393 Hydrangea altissima, *Wall.*
1394 —— vestita, *Wall.*
1395 —— Khasyana, *Hf. and Th.*
1396 —— aspera, *Don.*
1397 —— stylosa, *Hf. and Th.*
1398 —— robusta, *Hf. and Th.*
1399 Dichroa febrifuga, *Lour.*
1400 Pileostegia viburnoides, *Hf. and Th.*
1401 Polyosma Wallichii, *Benn.*
1402 Itea macrophylla, *Wall.*
1403 —— Chinensis, *Hook and Arn.*
1404 Parnassia foliosa, *Hf. and Th.*
1405 —— Wightiana, *Wall.*
1406 —— Mysorensis, *Heyne.*
1407 —— tenella, *Hf. and Th.*
1408 —— nubicola, *Wall.*
1409 —— affinis, *Hf. and Th.*
1410 —— pusilla, *Wall.*
1411 Philadelphus coronarius, *L.*
1412 Deutzia corymbosa, *Brown.*
1413 —— staminea, *R. Br.*
1414 Ribes laciniatum, *Hf. and Th.*
1415 —— luridum, *Hf. and Th.*
1416 —— desmocarpum, *Hf. and Th.*
1417 —— glaciale, *Wall.*
1418 —— Griffithii, *Hf. and Th.*

CRASSULACEÆ.

1419 Crassula Indica, *Dene.*
1420 Bryophyllum calycinum, *Salisb.*
1421 Kalanchoe varians, *Edg.*
1422 —— floribunda, *W.A.*
1423 —— laciniata, *Dc.*
1424 Umbilicus spathulatus, *Hf. and Th.*
1425 Sedum crenulatum, *Hf. and Hf. and Th.*
1426 —— quadrifidum, *Pall.*
1427 —— Himalense, *Don.*
1428 —— bupleuroides, *Wall.*
1429 —— elongatum, *Wall.*
1430 —— fastigiatum, *Hf. and Th.*
1431 —— humile, *Hf. and Th.*
1432 —— crassipes, *Wall.*
1433 —— trifidum, *Wall.*
1434 —— adenotrichum, *Wall.*
1435 —— trullipetalum, *Hf. and Th.*
1436 —— multicaule, *Wall.*
1437 —— perpusillum, *Hf. and Th.*
1438 Triactina verticillata, *Hf. and Th.*

DROSERACEÆ.

1439 Drosera Burmanni, *Vhl.*
1440 —— lunata, *Ham.*
1441 Aldrovanda vesiculosa, *L.*

HAMAMELIDEÆ.

1442 Corylopsis Himalayana, *Griff.*
1443 Loropetalum Chinense, *Oliv.*
1444 Bucklandia populifolia, *R. Br.*
1445 Distylium Indicum, *Oliv.*
1446 Sycopsis Griffithiana, *Oliv.*
1447 Altingia excelsa, *Noronh.*

HALORAGEÆ

1448 Haloragis scaber, *Thbg.*
1449 —— micrantha, *S.Z.*
1450 Myriophyllum tetrandrum, *Roxb.*
1451 —— Indicum, *Willd.*
1452 —— tuberculatum, *Roxb.*
1453 —— verticillatum, *L.*
1454 Callitriche stagnalis, *Scop.*

RHIZOPHOREÆ.

1455 Rhizophora mucronata, *Lamk.*
1456 —— conjugata, *L.*
1457 Ceriops Roxburghiana, *Arn.*
1458 —— Candolleana, *Arn.*
1459 Kandelia Rheedii, *W.A.*
1460 Bruguiera gymnorhiza, *Lamk.*
1461 —— parviflora, *W.A.*
1462 Carallia integerrima, *Dc.*
1463 —— lanceæfolia, *Roxb.*

COMBRETACEÆ.

1464 Terminalia catappa, *L.*
1465 —— Bellerica, *Roxb.*
1466 —— Chebula, *Roxb.*
1467 —— citrina, *Roxb.*
1468 —— Gangetica, *Roxb.*
1469 —— bialata, *Roxb.*
1470 —— glabra, *Roxb.*
1471 —— Arjuna, *Roxb.*
1472 —— tomentosa, *Roxb.*

1473 Terminalia crenata, *Roxb.*
1474 —— paniculata, *W. A.*
1475 —— myriocarpa, *Heurck and Muell. Arg.*
1476 Calycopteris floribunda, *Nub.*
1477 —— Roxburghii, *Kz.*
1478 Anogeissus latifolius, *Wall.*
1479 —— acuminatus, *Wall.*
1480 Lumnitzera racemosa, *Willd.*
1481 Combretum decandrum, *Roxb.*
1482 —— squamosum, *Roxb.*
1483 —— pilosum, *Roxb.*
1484 —— Wallichii, *Dc.*
1485 —— costatum, *Roxb.*
1486 —— nanum, *Roxb.*
1487 —— extensum, *Roxb.*
1488 —— semiadnatum, *Heurck and Muell. Arg.*
1489 —— Chinense, *Roxb.*
1490 Quisqualis Indica, *L.*
1491 Illigera appendiculata, *Bl.*

MYRTACEÆ.

1492 Psidium guava, *L.*
1493 Nelitris paniculata, *Ldl.*
1494 Eugenia claviflora, *Roxb.*
1495 —— cuneata, *Wall.*
1496 —— cymosa, *Lamk.*
1497 —— ramosissima, *Wall.*
1498 —— tetragona, *Wall.*
1499 —— Willdenowii, *Dc.*
1500 —— caryophyllifolia, *Roxb.*
1501 —— fasciculata, *Wall.*
1502 —— obovata, *Wall.*
1503 —— Paneala *Wall.*
1504 Eugenia lanceæfolia, *Roxb.*
1505 —— cerasiflora, *Kz.*
1506 —— balsamea, *Wall.*
1507 —— præcox, *Roxb.*
1508 —— Jambolana, *L.*
1509 —— fruticosa, *Roxb.*
1510 —— Heyneana, *Wall.*
1511 —— Malaccensis, *L.*
1512 —— grandis, *Wight.*
1513 —— Jambos, *L.*
1514 —— polypetala, *Wall.*
1515 —— aquea, *Dc.*
1516 —— bifaria, *Wall.*
1517 —— reticulata, *Wight.*
1518 —— formosa, *Wall.*
1519 —— mangifolia, *Wall.*
1520 —— inophylla, *Dc.*
1521 —— oblata, *Wall.*
1522 Barringtonia acutangula, *Gaertn.*
1523 —— racemosa, *Roxb.*
1524 Careya herbacea, *Roxb.*
1525 —— sphærica, *Roxb.*
1526 —— arborea, *Roxb.*

MELASTOMACEÆ.

1527 Osbeckia brachystemon, *Naud.*
1528 —— Chinensis, *L.*
1529 —— capitata, *Bth.*
1530 —— stellata, *Don.*
1531 —— crinita, *Bth.*
1532 —— rostrata, *Don.*
1533 —— nutans, *Wall.*
1534 —— Nepalensis, *Hook.*
1535 Melastoma Malabathricum, *L.*
1536 —— normale, *Don.*
1537 Oxyspora paniculata, *Dc.*
1538 —— vagans, *Wall.*

1539 Oxyspora cernua, *Hf. & Th.*
1540 Blastus parvifolius, *Trian.*
1541 Sonerila tenera, *Royle.*
1542 —— amabilis, *Kz.*
1543 —— squarrosa, *Roxb.*
1544 —— arguta, *R. Br.*
1545 —— maculata, *Roxb.*
1546 —— emaculata, *Roxb.*
1547 —— angustifolia, *Roxb.*
1548 Sarcopyramis Nepalensis, *Wall.*
1549 —— lanceolata, *Wall.*
1550 Medinella rubicunda, *Bl.*
1551 —— Himalayana, *Hf.*
1552 —— pauciflora, *Hf.*
1553 Memecylon edule, *Roxb.*
1554 —— capitellatum, *Roxb.*

LYTHRARIEÆ.

1555 Ammannia Indica, *Spreng.*
1556 —— dentelloides, *Kz.*
1557 —— pentandra, *Roxb.*
1558 —— octandra, *L.*
1559 —— glauca, *Wall.*
1560 —— rotundifolia, *Wight.*
1561 —— vesicatoria, *Roxb.*
1562 —— multiflora, *Roxb.*
1563 —— auriculata, *Willd.*
1564 —— pygmæa, *Kz.*
1565 —— tenuis, *Wight.*
1566 —— simpliciuscula, *Kz.*
1567 Woodfordia fruticosa, *Kz.*
1568 Lawsonia alba, *L.*
1569 Crypteronia paniculata, *Bl.*
1570 —— glabra, *Bl.*
1571 Lagerstrœmia flos reginæ, *Retz.*
1572 —— villosa, *Wall.*
1573 —— Indica, *L.*
1574 —— parviflora, *Roxb.*
1575 Duabanga grandiflora, *Kz.*
1576 Sonneratia apetala, *Ham.*
1577 —— acida, *L. f.*

ONAGRARIEÆ.

1578 Epilobium montanum, *L.*
1579 —— roseum, *L.*
1580 —— tetragonum, *L.*
1581 Jussiæa repens, *L.*
1582 —— villosa, *Lamk.*
1583 —— augustifolia, *Lamk.*
1584 Ludwigia parviflora, *Roxb.*
1585 —— prostrata, *Roxb.*
1586 Circæa lutetiana, *L.*
1587 —— alpina, *L.*
1588 Trapa bispinosa, *Roxb.*
1589 —— quadrispinosa, *Roxb.*

SAMYDEÆ.

1590 Casearia Vareca, *Roxb.*
1591 —— tomentosa, *Roxb.*
1592 —— Canziala, *Wall.*
1593 —— glomerata, *Roxb.*

PASSIFLOREÆ.

1594 Passiflora fœtida, *L.*
1595 —— Walkeri, *Wight.*
1596 —— Nepalensis, *Wall.*
1597 —— Leschenaultii, *Dc.*
1598 —— minima, *L.*
1599 Modecca trilobata, *Roxb.*
1600 —— extensa, *Wall.*
1601 Carica papaya, *L.*

CUCURBITACEÆ.

1602 Hodgsonia heteroclita, *Hf. and Th.*
1603 Trichosanthes lobata, *Roxb.*
1604 —— cucumerina, *L.*
1605 —— rer iformis, *Miq.*

1606 Trichosanthes palmata, *Roxb.*
1607 —— dioica, *Roxb.*
1608 —— cordata, *Roxb.*
1609 Scotanthus tubiflorus, *Naud.*
1610 Lagenaria vulgaris, *Ser.*
1611 Luffa cylindrica, *Roem.*
1612 —— acutangula, *Roxb.*
1613 —— amara, *Roxb.*
1614 —— graveolens, *Roxb.*
1615 —— echinata, *Roxb.*
1616 Benincasa cerifera, *Savi.*
1617 Momordica charantia, *L.*
1618 —— Balsamina, *L.*
1619 —— dioica, *Roxb.*
1620 —— renigera, *Wall.*
1621 —— mixta, *Roxb.*
1622 Thladiantha dubia, *Bunge.*
1623 Cucumis trigonus, *Roxb.*
1624 —— Melo, *L.*
1625 —— sativus, *L.*
1626 Citrullus vulgaris, *Schrad.*
1627 Cephalandra Indica, *Naud.*
1628 Cucurbita moschata, *Duch.*
1629 —— pepo, *Dc.*
1630 —— maxima, *Duch.*
1631 Bryonia laciniosa, *L.*
1632 —— scabrella, *Arn.*
1633 Zehneria umbellata, *Thw.*
1634 —— Hookeriana, *Arn.*
1635 Melothria Indica, *Lour.*
1636 Herpetospermum pedunculosum, *Ser.*
1637 Gomphogyne cissiformis, *Griff.*
1638 Actinostema digynum, *Griff.*
1639 Gynostema trigynum, *Griff*
1640 Alsomitra clavigera, *Kz.*

BEGONIACEÆ.

1641 Begonia Roxburghii, *Dc.*
1642 —— polycarpa, *Dc.*
1643 —— picta, *Wall.*
1644 —— Josephi, *Dc.*
1645 —— gemmipara, *Hf. and Th.*
1646 —— xanthina, *Hook.*
1647 —— barbata, *Wall.*
1648 —— rubro-venia, *Hook.*
1649 —— laciniata, *Roxb.*
1650 —— megaptera, *Dc.*
1651 —— Cathcarti, *Hf.*
1652 —— Sikkimensis, *Dc.*
1653 —— Thomsoni, *Dc.*
1654 —— Griffithii, *Dc.*
1655 —— scutata, *Wall.*
1656 —— Silhetensis, *Dc.*
1657 —— amœna, *Wall.*
1658 —— Rex, *Putzeys.*
1659 —— brevicaulis, *Dc.*
1660 —— pedunculosa, *Wall.*
1661 —— ovatifolia, *Dc.*
1662 —— Meisneri, *Wall.*
1663 —— Nepalensis, *Dc.*

CACTEÆ.

1664 Opuntia Dillenii, *Haw.*

FICOIDEÆ.

1665 Sesuvium Portulacastrum, *Roxb.*
1666 Trianthema pentandra, *L.*
1667 —— obcordatum, *Roxb.*
1668 —— cristallina, *Vhl.*
1669 Mollugo Spergula, *L.*
1670 —— stricta, *L.*
1671 —— glinus, *Rich.*
1672 —— pentaphylla, *L.*
1673 —— cerviana, *Ser.*

UMBELLIFERÆ.

1674 Hydrocotyle Asiatica, *L.*
1675 —— Javanica, *Thbg.*
1676 —— rotundifolia, *Roxb.*
1677 Sanicula Europæa, *L*
1678 Trachydium, *Sp.*
1679 Bupleurum tenue, *Ham.*
1680 - —— longicaule, *Wall.*
1681 —— Candollei, *Wall.*
1682 —— marginatum, *Wall.*
1683 Apium graveolens, *L.*
1684 Petroselinum sativum, *L.*
1685 Carum Roxburghianum, *Bth. et Hf.*
1686 —— anethifolium, *Bth. and Hf.*
1687 —— copticum, *Bth. & Hf.*
1688 Pimpinella diversifolia, *Dc.*
1689 Chærophyllum villosum, *Wall.*
1690 Seseli Indicum, *W. A.*
1691 Fœniculum vulgare, *L.*
1692 Dasyloma Bengalense, *Dc.*
1693 —— glaucum, *Dc.*
1694 Œnanthe stolonifera, *Roxb.*
1695 Ligusticum striatum, *Dc.*
1696 —— tenuifolium, *Wall.*
1697 Selinum Candollei, *Bth. and Hf.*
1698 Cortia Lindleyi, *Dc.*
1699 Pleurospermum pumilum, *Dc.*
1700 —— dentatum, *Wall.*
1701 —— Brunonis, *Dc.*
1702 —— Govanianum, *Dc.*
1703 —— angelicoides, *Dc.*
1704 Peucedanum Sowa, *Bth. and Hf.*
1705 —— ramosissimum, *Bth. and Hf.*
1706 Pencedanum glaucum, *Dc.*
1707 Heracleum diversifolium, *Wall.*
1708 —— candicans, *Wall.*
1709 —— Brunonis, *Wall.*
1710 —— Nepalense, *Don.*
1711 —— Birmanicum, *Kz.*
1712 Coriandrum sativum, *L.*
1713 Daucus Carota, *L.*
1714 Caucalis Anthriscus, *L.*

ARALIACEÆ.

1715 Aralia Cachemirica, *Dcne.*
1716 —— armata, *Seem.*
1717 —— foliosa, *Seem.*
1718 —— Thomsoni, *Seem.*
1719 —— cissifolia, *Griff.*
1720 Pentapanax racemosum, *Seem.*
1721 —— subcordatum, *Seem.*
1722 —— parasiticum, *Seem.*
1723 —— umbellatum, *Seem.*
1724 —— Leschenaultii, *Seem.*
1725 Panax pseudo - ginseng, *Wall.*
1726 Acanthopanax aculeata, *Dcne.*
1727 —— sepium, *Seem.*
1728 Helwingia Himalaica, *Hf. and Th.*
1729 Heptapleurum Wallichianum, *Seem.*
1730 —— venulosum, *Seem.*
1731 —— capitatum, *Seem.*
1732 Agalma æsculifolium, *Seem.*
1733 —— rostratum, *Seem.*
1734 —— tomentosum, *Seem.*
1735 —— elatum, *Seem.*
1736 —— glaucum, *Seem.*
1737 —— Griffithii, *Seem.*

1738 Trevesia palmata, *Vis.*
1739 Heteropanax fragrans, *Seem.*
1740 Brassaiopsis palmata, *Kz.*
1741 —— Hainla, *Seem.*
1742 —— hispida, *Seem.*
1743 —— aculeata, *Seem.*
1744 —— floribunda, *Seem.*
1745 —— confluens, *Seem.*
1746 Macropanax oreophilum, *Miq.*
1747 —— undulatum, *Seem.*
1748 Hedera Helix, *L.*
1749 Tupidanthus calyptratus, *Hf. and Th.*

CORNACEÆ.

1750 Alangium decapetalum, *Lk.*
1751 —— hexapetalum, *Lam.*
1752 Marlea begoniæfolia, *Roxb.*
1753 —— barbata, *R. Br.*
1754 Cornus macrophylla, *Wall.*
1755 —— oblonga, *Wall.*
1756 —— fragifera, *Bth.*
1757 Aucuba Himalaica, *Hf. and Th.*
1758 Torricellia tiliæfolia, *Dc.*

CAPRIFOLIACEÆ.

1759 Lonicera hispida, *Pall.*
1760 —— ligustrina, *Wall.*
1761 —— tomentella, *Hf. and Th.*
1762 —— sericea, *Royle.*
1763 —— angustifolia, *Wall.*
1764 —— rupicola, *Hf. and Th.*
1765 —— spinosa, *Jacq.*
1766 —— Myrtillus, *Hf. and Th.*
1767 —— parvifolia, *Edg.*
1768 —— obovata, *Royle.*
1769 Lonicera quinquelocularis, *Hardw.*
1770 —— gracilis, *Kurz.*
1771 —— decipiens, *Hf. and Th.*
1772 —— alpigena, *L.*
1773 —— Japonica, *Thbg.*
1774 —— glabrata, *Wall.*
1775 —— Loureirii, *Dc.*
1776 Leycesteria formosa, *Wall.*
1777 Triosteum Himalayanum, *Wall.*
1778 Viburnum cotinifolium, *Don.*
1779 —— corylifolium, *Hf. and Th.*
1780 —— involucratum, *Wall.*
1781 —— cordifolium, *Wall.*
1782 —— fœtidum, *Wall.*
1783 —— lutescens, *Bl.*
1784 —— punctatum, *Ham.*
1785 —— odoratissimum, *Ker.*
1786 —— Simonsii, *Hf. and Th.*
1787 —— erubescens, *Wall.*
1788 —— nervosum, *Don.*
1789 —— coriaceum, *Bl.*
1790 Sambucus Javanica, *Reinw.*
1791 —— adnata, *Wall.*

RUBIACEÆ.

1792 Galium asperifolium, *Wall.*
1793 —— acutum, *Edg.*
1794 —— rotundifolium, *L.*
1795 —— hirtiflorum, *Wall.*
1796 —— triflorum, *L.*
1797 —— aparine, *L.*
1798 Rubia cordifolia, *L.*
1799 —— charæfolia, *Wall.*
1800 —— Sikkimensis, *Kurz.*
1801 Geophila reniformis, *Don.*

1802 Hydrophylax maritima, *L.f.*
1803 Spermacoce articularis, *L.*
1804 —— hispida, *L.*
1805 Serissa fœtida, *Comm.*
1806 Leptodermis lanceolata, *Wall.*
1807 Borreria lasiocarpa, *Wall.*
1808 Knoxia corymbosa, *Willd.*
1809 —— mollis, *R. Br.*
1810 —— compressa, *Wall.*
1811 —— brachycarpa, *Roxb.*
1812 Grumilea elongata, *Wight.*
1813 Psychotria fulva, *Ham.*
1814 —— viridiflora, *Rwd. L.*
1815 —— calophylla, *Wall.*
1816 —— Asiatica, *L.*
1817 Chasalia sphærocarpa, *Wall.*
1818 —— curviflora, *Thw.*
1819 Ixora tomentosa, *Roxb.*
1820 —— Indica, *L.*
1821 —— naucleiflora, *Wall.*
1822 —— subcapitata, *Wall.*
1823 —— villosa, *Roxb.*
1824 —— cuneifolia, *Roxb.*
1825 —— acuminata, *Roxb.*
1826 —— subsessilis, *Wall.*
1827 —— oxyphylla, *Wall.*
1828 —— barbata, *Roxb.*
1829 —— undulata, *Roxb.*
1830 —— parviflora, *Vhl.*
1831 —— coccinea, *L.*
1832 —— Bandhuca, *L.*
1833 Coffea tetrandra, *Roxb.*
1834 —— Bengalensis, *Roxb.*
1835 Saprosma ternata, *Hf.*
1836 Canthium didymum, *Gaertn.*
1837 —— parvifolium, *Roxb.*
1838 —— angustifolium, *Roxb.*
1839 Damnacanthus Indicus, *Gaertn.*
1840 Pæderia fœtida, *L.*
1841 —— tomentosa, *Bl.*
1842 Morinda citrifolia, *L.*
1843 —— bracteata, *Roxb.*
1844 —— exserta, *Roxb.*
1845 —— angustifolia, *Roxb.*
1846 —— umbellata, *L.*
1847 —— tomentosa, *Heyne.*
1848 Pentapyxis stipulata, *Hf.*
1849 —— glaucophylla, *Hf.*
1850 Polysolenia Wallichii, *Hf.*
1851 Lasianthus Wallichii, *Wight.*
1852 —— stercorarius, *Bl.*
1853 —— sylvestris, *Bl.*
1854 —— lucidus, *Bl.*
1855 —— cyanocarpus, *Jack.*
1856 Scyphiphora hydrophylacea, *Gaertn.*
1857 Vanqueria spinosa, *Roxb.*
1858 —— pubescens, *Kz.*
1859 Hamiltonia suaveolens, *Roxb.*
1860 Urophyllum streptopodium, *Wall.*
1861 Hedyotis hispida, *Retz.*
1862 —— approximata, *R. Br.*
1863 —— auricularia, *L.*
1864 —— lineata, *Don.*, *non Roxb.*
1865 —— costata, *Kz.*, *non R. Br.*
1866 —— Wightiana, *Wall.*
1867 —— scandens, *Roxb.*
1868 —— racemosa, *Lamk.*
1869 —— biflora, *R. Br.*
1870 —— paniculata, *Roxb.*
1871 —— pumila, *L.*
1872 —— Burmanniana, *R. Br.*

1873 Hedyotis brachypoda, *Dc.*
1874 —— spergulacea, *Dc.*
1875 —— aspera, *Heyne.*
1876 —— Heynei, *R. Br.*
1877 —— umbellata, *Lam.*
1878 —— polycarpa, *R. Br.*
1879 —— scandens, *Roxb.*
1880 —— cephalophora, *R. Br.*
1881 —— microcephala, *R. Br.*
1882 —— ingrata, *Wall.*
1883 —— monocephala, *Wall.*
1884 —— urophylla, *Wall.*
1885 —— carnosa, *Wall.*
1886 —— calycina, *Wall.*
1887 —— striulata, *R. Br.*
1888 —— extensa, *B. Rr.*
1889 —— stipulata, *R. Br.*
1890 Diplospora singularis, *Korth.*
1891 Petunga Roxburghii, D*c.*
1892 Hyptianthera stricta, *W. A.*
1893 Polyura geminata, *Hf.*
1894 Ophiorrhiza Mungos, *L.*
1895 —— bracteolata, *P. Br.*
1896 —— repens, *Wall.*
1897 —— argentea, *Wall.*
1898 —— gracilis, *Kz.*
1899 —— subcapitata, *Wall.*
1900 —— villosa, *Roxb.*
1901 Wendlandia tinctoria, *Dc.*
1902 —— exserta, *Dc.*
1903 —— coriacea, *Dc.*
1904 —— bifaria, *Wall.*
1905 Spiradiclis bifida, K*z.*
1906 —— cæspitosa, *Bl.*
1907 Myrioneuron nutans, *Wall.*
1908 Silvianthus bracteatus, *Hf.*
1909 Carlemannia Griffithii, *Bth.*
1910 —— congesta, *Hf. and Th.*
1911 Adenosacme Nepalensis, *Wall.*
1912 —— longifolia, *Wall.*
1913 Dentella repens, *Forst.*
1914 Nauclea sessilifolia, *Roxb.*
1915 —— parvifolia, *Roxb.*
1916 —— rotundifolia, *Roxb.*
1917 —— polycephala, *Wall.*
1918 —— cordifolia, *Roxb.*
1919 Sarcocephalus Cadamba, *Kz.*
1920 Cephalanthus naucleoides, *Dc.*
1921 Uncaria sessilifolia, *Roxb.*
1922 —— pilosa, *Roxb.*
1923 —— Roxburghii, *Wall.*
1924 —— sessilifructus, *Roxb.*
1925 Hymenopogon parasiticus, *Wall.*
1926 Hymenodictyon flaccidum, *Wall.*
1927 —— excelsum, *Wall.*
1928 —— thyrsiflorum, *Wall.*
1929 Luculia Pinceana, *Hook.*
1930 —— gratissima, *Wall.*
1931 Argostema verticillatum, *Wall.*
1932 —— rostratum, *Wall.*
1933 —— sarmentosum, *Wall.*
1934 —— humile, *Wall.*
1935 Griffithia longiflora, *Lamk.*
1936 Stylocoryne Webera, *Roxb.*
1937 —— densiflora, *Wall.*
1938 Brachytome Wallichii, *Hf.*
1939 Randia uliginosa, *Dc.*
1940 —— dumetorum, *Lamk.*
1941 —— glabra, *R. Br.*
1942 —— longispina, *Dc.*
1943 —— nutans *Lamk.*
1944 Gardenia florida, *L.*

1945 Gardenia costata, *Roxb.*
1946 —— latifolia, *Ait.*
1947 —— tetrasperma, *Roxb.*
1948 —— campanulata, *Roxb.*
1949 Posoqueria rigida, *Wall.*
1950 Mussaenda frondosa, *L.*
1951 —— glabra, *Vhl.*
1952 —— corymbosa, *Roxb.*
1953 —— pubescens, *Ham.*
1954 —— macrophylla, *Wall.*
1955 —— incana, *Wall.*

VALERIANEÆ.

1956 Patrinia parviflora, *S. Z.*
1957 Nardostachys jatamansi, *Dc.*
1958 —— grandiflora, *Dc.*
1959 Valeriana Wallichii, *Dc.*
1960 —— officinalis, *L.*
1961 —— Hardwickii, *Wall.*
1962 Triplostegia glandulifera, *Wall.*

DIPSACEÆ.

1963 Morina longifolia, *Wall.*
1964 —— polyphylla, *Wall.*
1965 —— nana, *Wall.*
1966 —— betonicoides, *Bth.*
1967 Dipsacus inermis, *Wall.*
1968 —— asper, *Wall.*
1969 Pterocephalus, sp.

COMPOSITÆ.

1970 Ethulia conyzoides, *L.*
1971 Vernonia anthelmintica, *Willd.*
1972 —— subsessilis, *Dc.*
1973 —— attenuata, *Dc.*
1974 —— saligna, *Dc.*
1975 —— divergens, *Bth.*
1976 Vernonia extensa, *Dc.*
1977 —— teres, *Wall.*
1978 —— aspera, *Ham.*
1979 —— bracteata, *Wall.*
1980 —— cinerea, *Less.*
1981 —— acuminata, *Dc.*
1982 —— arborea, *Ham.*
1983 —— talaumifolia, *Hook. f and Th.*
1984 —— blandula, *C. B. Clarke.*
1985 —— scandens, *Dc.*
1986 —— vagans, *Dc.*
1987 —— Andersoni, *C. B. Clarke.*
1988 Elephantopus scaber, *L.*
1989 Adenostemma viscosum, *Forst.*
1990 Ageratum conyzoides, *L.*
1991 Eupatorium odoratum, *L.*
1992 —— longicaule, *Wall.*
1993 —— Simonsii, *C. B. Clarke.*
1994 —— Birmannicum, *Dc.*
1995 —— Punduanum, *Wall.*
1996 —— Reevesii, *Wall.*
1997 —— nodiflorum, *Wall.*
1998 —— cannabinum, *L.*
1999 Mikania scandens, *Willd.*
2000 Solidago virga-aurea, *L.*
2001 Dichrocephala latifolia, *Dc.*
2002 —— Benthamii, *C. B. Clarke.*
2003 —— chrysanthemifolia, *Dc.*
2004 Cyathocline lyrata, *Cass.*
2005 Grangea maderaspatana, *Poir.*
2006 Myriactis Nepalensis, *Less.*
2007 —— Wallichii, *Less.*
2008 —— Gmelini, *Dc.*

2009 Rhynchospermum verticillatum, *Reinw.*
2010 Brachycome (?) Assamica, *C. B. Clarke.*
2011 Callistephus Chinensis, *Nees.*
2012 Aster Sikkimensis, *Hook. f. et Th.*
2013 —— alpinus, *L.*
2014 —— Himalaicus, *C. B. Clarke.*
2015 —— tricephalus, *C. B. Clarke.*
2016 —— elegans, *Hook. f. et Th.*
2017 —— diplostephoides, *Bth.*
2018 —— scabridus, *Hook. f. et Th.*
2019 Brachyactes Indica, *C. B. Clarke.*
2020 Erigeron acre, *L.*
2021 —— hispidum, *Dc.*
2022 —— sub-lyratum, *Roxb.*
2023 —— bellidioides, *Bth.*
2024 —— multiradiatum, *Bth.*
2025 Microglossa volubilis, *Dc.*
2026 —— Cabulica, *Bth.*
2027 —— Griffithii, *C. B. Clarke.*
2028 —— albescens, *Bth.*
2029 Conyza semi-pinnatifida, *Wall.*
2030 —— veronicæfolia, *Wall.*
2031 —— viscidula, *Wall.*
2032 —— angustifolia, *Ham.*
2033 —— absinthifolia, *Dc.*
2034 Thespis divaricata, *Dc.*
2035 Blumea amplectens, *Dc.*
2036 —— bifoliata, *Dc.*
2037 —— barbaf *Dc.*
2038 Blumea Wightiana, *Dc.*
2039 —— lactucæfolia, *Dc.*
2040 —— lacera, *Dc.*
2041 —— obovata, ? *Dc.*
2042 —— runcinata, *Dc.*
2043 —— virens, *Dc.*
2044 —— subsimplex, *Dc.*
2045 —— fasciculata, *Dc.*
2046 —— hieracifolia, *Dc.*
2047 —— oxyodonta, *Dc.*
2048 —— riparia, *Dc.*
2049 —— procera, *Dc.*
2050 —— Wallichii, *C. B. Clarke.*
2051 —— squarrosa, *Wall.*
2052 —— aromatica, *Dc.*
2053 —— densiflora, *Dc.*
2054 —— balsamifera, *Dc.*
2055 —— flava, *Dc.*
2056 —— alata, *Dc.*
2057 —— intermedia, *C. B. Clarke.*
2058 —— pterodonta, *Dc.*
2059 —— aurita, *Dc.*
2060 Pluchea Indica, *Less.*
2061 —— linearifolia, *C. B. Clarke.*
2062 Sphæranthus microcephalus, *Willd.*
2063 —— hirtus, *Willd.*
2064 Athroisma laciniatum, *Dc.*
2065 Antennaria muscoides, *Hook. f. et Th.*
2066 Leontopodium alpinum, *Cass.*
2067 Anaphalis Royleana, *Dc.*
2068 —— cinnamomea, *Bth.*
2069 —— triplinervis, *Sims.*
2070 —— nubigena, *Dc.*
2071 —— mucronata, *Dc.*

2072 Anaphalis contorta, *Bth.*
2073 —— tenella, *Dc.*
2074 —— chionantha, *Dc.*
2075 —— subumbellata, *C. B. Clarke.*
2076 —— adnata, *Dc.*
2077 —— araneosa, *Dc.*
2078 Gnaphalium hypoleucum, *Dc.*
2079 —— luteo-album, *L.*
2080 —— Indicum, *L.*
2081 —— crispatulum, *Delile.*
2082 Cæsulia axillaris, *Roxb.*
2083 Inula vestita, *Wall.*
2084 —— nervosa, *Wall.*
2085 —— Simonsii, *C. B. Clarke.*
2086 —— Hookeri, *C. B. Clarke.*
2087 —— Kalipanica, *C. B. Clarke.*
2088 —— Cappa, *Dc.*
2089 —— eupatorioides, *Dc.*
2090 —— rubricaulis, *Bth.*
2091 —— Griffithii, *C. B. Clarke.*
2092 Vicoa Indica, *Dc.*
2093 Pulicaria foliolosa, *Dc.*
2094 —— angustifolia, *Dc.*
2095 —— crispa, *Bth.*
2096 Carpesium cernuum, *L.*
2097 Lagascea mollis, *Cav.*
2098 Adenocaulon Himalaicum, *Edgw.*
2099 Xanthium strumarium, *L.*
2100 Siegesbeckia orientalis, *L.*
2101 Enhydra Heloncha, *Dc.*
2102 Eclipta alba, *Hassk.*
2103 Blainvillea latifolia, *Dc.*
2104 Wedelia calendulacea, *Less.*
2105 Wedelia scandens, *Roxb*
2106 —— biflora, *Roxb.*
2107 Spilanthes Acmella, *L.*
2108 Guizotia oleifera, *Dc.*
2109 Bidens pilosa, *L.*
2110 —— decomposita, *Wall.*
2111 Glossogyne pinnatifida, *Dc.*
2112 Chrysanthellum Indicum. *Dc.*
2113 Galinsoga parviflora, *Cav.*
2114 Tridax procumbens, *L.*
2115 Tagetes patula, *L.*
2116 —— erecta, *L.*
2117 Achillea squarrosa, *Aiton.*
2118 Chrysanthemum coronarium, *L.*
2119 —— Indicum, *L.*
2120 —— Atkinsoni, *C. B. Clarke.*
2121 Cotula anthemoides, *L.*
2122 —— hemisphærica, *Wall.*
2123 —— dichrocephaloides, *C. B. Clarke.*
2124 Centipeda orbicularis, *Lour.*
2125 —— minuta, *Bth.*
2126 Tanacetum nubigenum, *Wall.*
2127 —— Tibeticum, *Hf. and Th.*
2128 —— gossypinum, *Hf. and Th.*
2129 Artemisia tricophora, *Dc.*
2130 —— parviflora, *Roxb.*
2131 —— vulgaris, *L.*
2132 —— canifolia, *Roxb.*
2133 —— biennis, *Willd.*
2134 —— Campbellii, *Hf. and Th.*
2135 Gynura angulosa, *Wall.*
2136 —— Nepalensis, *Dc.*

2137 Gynura sinuata, *Wall.*
2138 —— auriculata, *Dc.*
2139 Emilia sonchifolia, *Dc.*
2140 —— scabra, *Dc.*
2141 —— prenanthoidea, *Dc.*
2142 —— angustifolia, *Dc.*
2143 Ligularia arnicoides, *Dc.*
2144 —— macrantha, *Hf. and Th.*
2145 —— retusa, *Dc.*
2146 —— racemosa, *Dc.*
2147 Cremanthodium reniforme, *Bth.*
2148 —— pinnatifidum, *Bth.*
2149 —— palmatum, *Bth.*
2150 Doronicum linifolium, *Dc.*
2151 Cacalia quinqueloba, *Hf. and Th.*
2152 Senecio araneosus, *Dc.*
2153 —— Buimalia, *Ham.*
2154 —— campylodes, *Dc.*
2155 —— densiflorus, *Wall.*
2156 —— auriculatus, *Wall.*
2157 —— triligulatus, *Ham.*
2158 —— acuminatus, *Wall.*
2159 —— Griffithii, *Hf. and Th.*
2160 —— pallens, *Wall.*
2161 —— obtusatus, *Wall.*
2162 —— graciliflorus, *Dc.*
2163 —— spectabilis, *Wall.*
2164 —— diversifolius, *Wall.*
2165 —— laciniosus, *Wall.*
2166 —— ramosus, *Wall.*
2167 —— Wallichii, *Dc.*
2168 —— alatus, *Wall.*
2169 —— tetranthus, *Wall.*
2170 —— laciniosus, *Wall.*
2171 —— Arnottianus, *Wight*
2172 —— rufinervis, *Dc.*
2173 Senecio Bhotanicus, *C. B. Clarke.*
2174 —— vagans, *Wall.*
2175 —— Simonsii, *C. B. Clarke.*
2176 —— alpinus, *L.*
2177 —— Rabani, *C. B. Clarke.*
2178 —— pilosiusculus, *C. B. Clarke.*
2179 —— Mishmiensis, *C. B. Clarke.*
2180 —— corymbosa, *Dc.*
2181 —— Thomsoni, *C. B. Clarke.*
2182 —— Yaklae, *C. B. Clarke.*
2183 —— Mortoni, *C. B. Clarke.*
2184 Echinops echinatus, *Roxb.*
2185 Saussurea obvallata, *Wall.*
2186 —— cæspitosa, *Wall.*
2187 —— gossypina, *Wall.*
2188 —— affinis, *Spreng.*
2189 —— hypoleuca, *Spreng.*
2190 —— pterocaulon, *Dcne.*
2191 —— denticulata, *Wall.*
2192 —— candicans, *Dc.*
2193 —— deltoidea, *Dc.*
2194 —— conica, *C. B. Clarke.*
2195 —— Kunthiana, *Wall.*
2196 —— Sughoonensis, *C. B. Clarke.*
2197 —— subulata, *C. B. Clarke.*
2198 —— Andersoni, *C. B. Clarke.*
2199 —— eriostemon, *Wall.*
2200 —— Hookeri, *C. B. Clarke.*
2201 —— discolor, *Dc.*
2202 Microlonchus divaricatus, *Dc.*
2203 Tricholepis furcata, *Dc.*
2204 Carthamus tinctorius, *L.*
2205 Cnicus arvensis, *Hoffm.*

2206 Cnicus eriophorus, *Dc.*
2207 —— inolucratus, *Dc.*
2208 —— Sinensis, *Gardn. and Champ.*
2209 —— Nepalensis, *Dc.*
2210 Leucomeris spectabilis, *Don.*
2211 Ainsliæa pteropoda, *Dc.*
2212 —— aptera, *Dc.*
2213 —— angustifolia, *Hf. and Th.*
2214 Gerbera ovalifolia, *Dc.*
2215 —— lanuginosa, *Bth.*
2216 —— nivea, *Bth.*
2217 Berniera Nepalensis, *Dc.*
2218 Goniocaulon Indicum, *Bth.*
2219 Cichorium Intybus, *L.*
2220 —— Endivia, *Willd.*
2221 Picris hieracioides, *L.*
2222 Sonchus asper, *Fuchs.*
2223 —— arvensis, *L.*
2224 Youngia lyrata, *Cass.*
2225 —— fuscipappa, *Thw.*
2226 Prenanthes violæfolia, *Dcne.*
2227 —— glomerata, *Dcne.*
2228 —— grandiflora, *Wall.*
2229 —— graciliflora, *Wall.*
2230 —— Brunoniana, *Wall.*
2231 —— alata, *Hf. and Th.*
2232 —— scandens, *Hf. and Th.*
2233 —— Khasiana, *C. B. Clarke.*
2234 Melanoseris hastata, *Edg.*
2235 —— Lessertiana, *Dc.*
2236 —— bracteata, *Hf. and Th.*
2237 Lactuca obtusa, *Bth.*
2238 —— longifolia, *Dc.*
2239 —— brevirostris, *Champ.*
2240 —— gracilis, *Dc.*
2241 Taraxacum Dens Leonis, *Desv.*
2242 Ixeris polycephala, *Cass.*
2243 —— fontinalis, *Dc.*
2244 Crepis depressa, *Hf. and Th.*
2245 —— gracilis, *Hf. and Th.*
2246 —— Hookeriana, *C. B. Clarke.*
2247 Hieracium Silhetense, *Dc.*
2248 Dubiæa hispida, *Dc.*
2249 Mulgedium macranthum, *Hf. and Th.*
2250 Microrhynchus glaber, *Wight.*
2251 —— asplenifolius, *Dc.*
2252 —— sarmentosus, *Dc.*

CAMPANULACEÆ.

2253 Cephalostigma paniculatum, *Dc.*
2254 —— hirsutum, *Edg.*
2255 Campanumœa Javanica, *Bl.*
2256 Codonopsis viridis, *Wall.*
2257 —— affinis, *Hf. and Th.*
2258 —— inflata, *Hf. and Th.*
2259 —— Benthami, *Hf. and Th.*
2260 —— subsimplex, *Hf. and Th.*
2261 —— fœtens, *Hf. and Th.*
2262 Leptocodon gracilis, *Hf. and Th.*
2263 Cyclodon parviflorum, *Hf. and Th.*
2264 Cyananthus lobatus, *Wall.*
2265 —— linifolius, *Wall.*
2266 —— incanus, *Hf. and Th.*
2267 —— inflatus, *Hf. and Th.*

2268 Wahlenbergia agrestis, *Dc.*
2269 Campanula sylvatica, *Wall.*
2270 —— cana, *Wall.*
2271 —— canescens, *Wall.*
2272 —— colorata, *Wall.*
2273 —— fulgens *Wall.*
2274 —— modesta, *Hf. and Th.*
2275 —— Khasiana, *Hf. and Th.*
2276 Peracarpa carnosa, *Hf. and Th.*
2277 Piddingtonia nummularia, *Lamk.*
2278 Isolobus Roxburghianus, *Dc.*
2279 Speirema montanum, *Hf. and Th.*
2280 Lobelia trigona, *Roxb.*
2281 —— affinis, *Wall.*
2282 —— Zeylanica, *L.*
2283 —— Griffithii, *Hf. and Th*
2284 —— colorata, *Wall.*
2285 —— erecta, *Hf. and Th.*
2286 —— pyramidalis, *Wall.*
2287 —— Wallichiana, *Hf. and Th*
2288 —— rosea, *Wall.*

STYLIDIEÆ.

2289 Stylidium Kunthii, *Wall.*
2290 —— roseum, *Kz.*

GOODENOVIEÆ.

2291 Scævola Koenigii, *Vhl.*

ERICINEÆ.

2292 Vaccinium verticillatum, *Wall.*
2293 —— setigerum, *Wall.*
2294 —— variegatum, *Hf and Th.*
2295 Vaccinium odontocerum, *Wight.*
2296 —— acuminatum, *Dc.*
2297 —— Wightii, *Hf. and Th.*
2298 —— auriculatum, *Griff.*
2299 —— salignum, *Hf. and Th.*
2300 —— leucobotryum, *Nutt.*
2301 —— piliferum, *Hf. and Th.*
2302 —— glaucum, *Hf. and Th.*
2303 —— gaultheriæfolium, *Hf. and Th.*
2304 —— serratum, *Wight.*
2305 —— rugosum, *Hf. and Th.*
2306 —— obovatum, *Wight.*
2307 —— serpens, *Wight.*
2308 —— nummularium, *Hf. and Th.*
2309 —— Donianum, *Wight.*
2310 —— emarginatum, *Hf. and Th.*
2311 —— Dunalianum, *Wight.*
2312 —— bracteatum, *Thbg.*
2313 Pernettya repens, *Bl.*
2314 —— trichophylla, *Royle.*
2315 Gaultheria pyroloides, *Hf and Th.*
2316 —— Griffithiana, *Wight.*
2317 —— fragrantissima, *Wall.*
2318 —— punctata, *Bl.*
2319 —— discolor, *Nutt.*
2320 Andromeda ovalifolia, *Wall.*
2321 —— lanceolata, *Wall.*
2322 —— villosa, *Watl.*
2323 —— formosa, *Don.*
2324 Cassiope fastigiata, *Don.*
2325 —— selaginoides, *Hf. and Th.*
2326 Enkyanthus Himalaicus, *Hf. and Th.*

2327 Rhododendron Falconeri, *Hf.*
2328 —— argenteum, *Hf.*
2329 —— Hodgsonii, *Hf. and Th.*
2330 —— Griffithii, *Wight.*
2331 —— Thomsoni, *Hf.*
2332 —— Dalhousiæ, *Hf.*
2333 —— Edgeworthii, *Hf.*
2334 —— barbatum, *Wall.*
2335 —— Nuttalii, *Boott.*
2336 —— ciliatum, *Hf.*
2337 —— glaucum, *Hf.*
2338 —— Kendrickii, *Nutt.*
2339 —— pumilum, *Hf.*
2340 —— Batemanni, *Hook.*
2341 —— campanulatum, *Wall.*
2342 —— arboreum, *Sm.*
2343 —— Smithii, *Nutt.*
2344 —— niveum, *Hf.*
2345 —— fulgens, *Hf.*
2346 —— lanatum, *Hf.*
2347 —— Wightii, *Hf.*
2348 —— campylocarpum, *Hf.*
2349 —— Maddeni, *Hf.*
2350 —— cinnabarinum, *Hf.*
2351 —— Roylei, *Hf.*
2352 —— camelliæflorum, *Hf*
2353 —— pendulum, *Hf.*
2354 —— lepidotum, *Wall.*
2355 —— vaccinioides, *Hf.*
2356 —— Shepherdi, *Nutt.*
2357 —— virgatum, *Hf.*
2358 —— setosum, *Don.*
2359 —— nivale, *Hf.*
2360 —— anthopogon, *Don.*
2361 —— formosum, *Wall.*
2362 Diplarche multiflora, *Hf and Th.*
2363 —— pauciflora, *Hf. and Th.*
2364 Diapensia Himalaica, *Hf and Th.*
2365 Pyrola rotundifolia, *L.*
2366 Monotropa uniflora, *L.*

PLUMBAGINEÆ.

2367 Ægialitis annulata, *R. Br.*
2368 Plumbago Zeylanica, *L.*
2369 —— rosea, *L.*

PRIMULACEÆ.

2370 Primula prolifera, *Wall.*
2371 —— petiolaris, *Wall.*
2372 —— reticulata, *Wall.*
2373 —— pusilla, *Wall.*
2374 —— sapphirina, *Hf. and Th.*
2375 —— minutissima, *Wall.*
2376 —— Sibirica, *Jacq.*
2377 —— Telemachica, *Klatt.*
2378 —— denticulata, *Wall.*
2379 —— rotundifolia, *Wall.*
2380 —— spathulata, *Royle.*
2381 —— Sikkimensis, *Hook.*
2382 —— glabra, *Klatt.*
2383 —— uniflora, *Klatt.*
2384 Androsace selago, *Hf. and Th.*
2385 —— Lehmanni, *Wall.*
2386 —— Hookeriana, *Klatt.*
2387 —— rotundifolia, *Hardw.*
2388 —— carnosula, *Duby.*
2389 Bryocarpon Himalaicum, *Hf. and Th.*
2390 Cortusæ, sp.
2391 Lysimachia pyramidalis, *Wall.*
2392 —— multiflora, *Wall.*
2393 —— ramosa, *Wall.*
2394 —— evalvis, *Wall.*

2395 Lysimachia Japonica, *Thbg*
2396 —— prolifera, *Klatt.*
2397 Anagallis arvensis, *L.*
2398 Micropyxis pumila, *Duby.*

MYRSINEÆ.

2399 Mæsa ramentacea, *Wall.*
2400 —— nemoralis, *Dc.*
2401 —— montana, *Dc.*
2402 —— Indica, *Dc.*
2403 —— macrophylla, *Wall.*
2404 Samara undulata, *Dc.*
2405 Embelia Ribes, *Burm.*
2406 —— floribunda, *Wall.*
2407 —— villosa, *Wall.*
2408 —— robusta, *Roxb.*
2409 —— parviflora, *Wall.*
2410 —— vestita, *Roxb.*
2411 —— nutans, *Wall.*
2412 Myrsine capitellata, *Wall.*
2413 —— semiserrata, *Wall.*
2414 Ardisia paniculata, *Roxb.*
2415 —— anceps, *Wall.*
2416 —— macrocapa, *Wall.*
2417 —— floribunda, *Wall.*
2418 —— membranacea, *Wall.*
2419 —— neriifolia, *Wall.*
2420 —— serrulata, *Kz.*
2421 —— pendunculosa, *Wall.*
2422 —— humilis, *Vhl.*
2423 —— eugeniæfolia, *Wall.*
2424 —— oblonga, *De.*
2425 —— odontophylla, *Wall.*
2426 —— involucrata, *Kz.*
2427 Amblyanthus glandulosus, *Dc.*
2428 Hymenandra Wallichii, *Dc.*
2429 Antistrophe oxyantha, *Dc.*
2430 Ægiceras corniculata, *Blanco.*

SAPOTACEÆ.

2431 Chrysophyllum Roxburghii, *Don.*
2432 Sapota tomentosa, *Dc.*
2433 —— armata, *Dc.*
2434 —— Achras, *Mill.*
2435 Sideroxylon arboreum, *Ham.*
2436 —— grandifolium, *Wall.*
2437 Bassia latifolia, *Roxb.*
2438 —— villosa, *Wall.*
2439 —— butyracea, *Roxb.*
2440 Isonandra polyantha, *Wall.*
2441 Mimusops Elengi, *L.*
2442 —— hexandra, *Roxb.*

EBENACEÆ.

2443 Diospyros Tupru, *Ham.*
2444 —— melanoxylon, *Roxb.*
2445 —— pilosula, *Wall.*
2446 —— stricta, *Roxb.*
2447 —— variegata, *Kz.*
2448 —— nigricans, *Wall.*
2449 —— lanceæfolia, *Roxb.*
2450 —— montana, *Roxb.*
2451 —— Kaki, *L. f.*
2452 —— chloroxylon, *Roxb.*
2453 —— ramiflora, *Roxb.*
2454 —— Embryopteris, *Pers.*
2455 —— Toposia, *Eam.*
2456 —— mollis, *Griff.*

STYRACEÆ.

2457 Symplocos grandiflora, *Wall.*
2458 —— ferruginea, *Roxb.*
2459 —— oxyphylla, *Wall.*
2460 —— floribunda, *Wall.*
2461 —— pyrifolia, *Wall.*
2462 —— caudata, *Wall.*

2463 Symplocos ramosissima, *Wall.*
2464 —— cratægoides, *Don.*
2465 —— lucida, *Wall.*
2466 —— polycarpa, *Wall.*
2467 —— polystachya, *Wall.*
2468 —— spicata, *Roxb.*
2469 —— racemosa, *Roxb.*
2470 Styrax virgatum, *Wall.*
2471 —— serrulatum, *Roxb.*

JASMINEÆ.

2472 Jasminum Sambac, *L.*
2473 —— rubescens, *Ham.*
2474 —— quinqueflorum, *Heyne.*
2475 —— hirsutum, *Willd.*
2476 —— pubescens, *Willd.*
2477 —— undulatum, *Willd.*
2478 —— aristatum, *Wall.*
2479 —— punctatum, *Wall.*
2480 —— arborescens, *Roxb.*
2481 —— reticulatum, *Wall.*
2482 —— laurifolium, *Roxb.*
2483 —— calycinum, *Wall.*
2484 —— anastomozans, *Wall.*
2485 —— attenuatum, *Roxb.*
2486 —— glandulosum, *Wall.*
2487 —— scandens, *Vhl.*
2488 —— auriculatum, *Vhl.*
2489 —— paniculatum, *Roxb.*
2490 —— caudatum, *Wall.*
2491 —— dispermum, *Wall.*
2492 —— trinerve, *Roxb.*
2493 —— heterophyllum, *Roxb.*
2494 —— revolutum, *Sims.*
2495 —— grandiflorum, *L.*
2496 —— adenophyllum, *Wall.*
2497 —— ovatum, *Wall.*
2498 Chondrospermum smilacifolium, *Wall.*
2499 Nyctanthes arbor tristis, *L.*
2500 Schrebera Swietenia, *Roxb.*
2501 Fraxinus floribundus, *Wall.*
2502 Ligustrum bracteolatum, *Don.*
2503 —— Lindleyi, *Wall.*
2504 —— robustum, *Wall.*
2505 —— Nepalense, *Wall.*
2506 Olea glandulifera, *Wall.*
2507 —— dioica, *Roxb.*
2508 —— dentata, *Wall.*
2509 —— sabiæfolia, *Wall.*
2510 —— terniflora, *Kz.*
2511 Chionanthus dichotoma, *Roxb.*
2512 —— tenuiflora, *Wall.*
2513 —— ramiflora, *Roxb.*
2514 —— macrophylla, *Wall.*
2515 Osmanthus fragrans, *Lour.*

SALVADORACEÆ.

2516 Azima tetracantha, *Lamk.*

APOCYNACEÆ.

2517 Willughbeia edulis, *Roxb.*
2518 Melodinus monogynus, *Roxb.*
2519 Carissa diffusa, *Roxb.*
2520 —— carandas, *L.*
2521 Ophioxylon serpentinum, *L.*
2522 Thevetia neriifolia, *Juss.*
2523 Alyxia fasciculata, *Wall.*
2524 —— gracilis, *Wall.*
2525 Hunteria corymbosa, *Roxb.*
2526 Calpicarpum Roxburghii, *Don.*
2527 Cerbera Odallum, *Gaertn.*
2528 Tabernæmontana coronaria, *L.*

2529 Tabernæmontana cylindrica, *Wall.*
2530 Vinca rosea, *L.*
2531 —— parviflora, *Roxb.*
2532 Plumeria acuminata, *Dry.*
2533 —— alba, *Dry.*
2534 Vallaris dicnotoma, *Wall.*
2535 Parsonsia spiralis, *R. Br.*
2536 Beaumontia grandiflora, *Wall.*
2537 Wrightia tomentosa, *Roem. and Joh.*
2538 —— mollissima, *Wall.*
2539 —— tinctoria, *R. Br.*
2540 —— coccinea, *Wall.*
2541 Holarrhena Codaga, *Don.*
2542 —— antidysenterica, *Wall.*
2543 Alstonia scholaris, *R. Br.*
2544 Blaberopus neriifolius, *Wight.*
2545 Nerium odorum, *Sol.*
2546 Strophanthus caudatus,
2547 Chonemorpha macrophylla, *Don.*
2548 Rhynchospermum Wallichii, *Dc.*
2549 Aganosma caryophyllata, *Roxb.*
2550 —— cymosa, *Don.*
2551 —— marginata, *Don.*
2552 Ichnocarpus frutescens, *R. Br.*
2553 —— latifolia, *Wall.*
2554 —— fragrans, *Wall.*
2555 Ecdysanthera rosea, *Hook. and Arn.*
2556 —— brachiata, *Dc.*
2557 —— micrantha, *Dc.*
2558 Pottsia Cantoniensis, *Dc.*
2559 Anodendron paniculatum, *Dc.*

ASCLEPIADEÆ.

2560 Cyrtolepis reticulata, *Wal*
2561 —— Buchanani, *Roem. and Schult.*
2562 —— elegans, *Wall.*
2563 Goniostema acuminatum, *Wight.*
2564 Toxocarpus crassifolius, *W. A.*
2565 —— Himalensis, *Falc.*
2566 —— laurifolius, *Wight.*
2567 Ceropegia lucida, *Wall.*
2568 —— longifolia, *Wall.*
2569 —— angustifolia, *Wight.*
2570 —— lanceolata, *Wight.*
2571 —— Wallichii, *Wight.*
2572 —— pubescens, *Wall.*
2573 —— macrantha, *Wight.*
2574 Hoya linearis, *Wall.*
2575 —— fusca, *Wall.*
2576 —— Hookeriana, *Wight.*
2577 —— parasitica, *Wall.*
2578 —— lacuna, *Wight.*
2579 —— Arnottiana, *Wight.*
2580 —— lanceolata, *Wall.*
2581 —— Shepherdi, *Hook.*
2582 —— viridiflora, *R. Br.*
2583 —— pendula, *W. A.*
2584 —— acuminata, *Wall.*
2585 —— longifolia, *Wall.*
2586 —— parviflora, *Wight.*
2587 Pterostelma acuminata, *Wight.*
2588 Marsdenia tinctoria, *R. Br.*
2589 —— tenacissima, *W. A.*
2590 —— lucida, *Edg.*
2591 Cosmostigma racemosa, *Wight.*
2592 Heterostema Wallichii, *Wight.*

2593 Heterostema alata, *Wight.*
2594 —— Rheedii, *Sprg.*
2595 Pergularia pallida, *W. A.*
2596 —— odoratissima, *Sm.*
2597 Dischidia Bengalensis, *Colebr*
2598 Gongronema Nepalense, *Don.*
2599 Bidara tinens, *Dcne.*
2600 Gymnema sylvestre, *R. Br.*
2601 —— acuminatum, *Wall.*
2602 —— latifolium, *Wall.*
2603 —— Nepalense, *Wall.*
2604 —— sagittatum, *Wall.*
2605 —— hirsutum, *Wight.*
2606 —— affine, *Dcne.*
2607 Sarcolobus globosus, *Wall.*
2608 —— carinatus, *Wall.*
2609 Leptadenia reticulata, *W. A.*
2610 Tylophora carnosa, *Wall.*
2611 —— tenuissima, *W. A.*
2612 —— pauciflora, *W. A.*
2613 —— longifolia, *Wight.*
2614 —— exilis, *Colebr.*
2615 —— tenerrima, *Wight.*
2616 —— asthmatica, *W. A.*
2617 —— hirsuta, *W. A.*
2618 Belostemma hirsutum, *Wall.*
2619 Pentatropis microphylla, *W. A.*
2620 Calotropis gigantea, *R. Br.*
2621 —— Hamiltonii, *Wight.*
2622 —— herbacea, *Wight.*
2623 —— procera, *R. Br.*
2624 Oxystelma esculentum, *R. Br.*
2625 Raphistema pulchellum, *Wall.*
2626 Periploca calophylla, *Falc.*
2627 Cynanchum corymbosum, *Wight.*
2628 —— pauciflorum, *R. Br.*
2629 —— Wallichii, *Wight.*
2630 —— callialata, *Ham.*
2631 Asclepias Curassavica, *L*
2632 Dæmia extensa, *R. Br.*
2633 Pentasacme caudatum, *Wall.*
2634 —— Wallichii, *Wight.*
2635 Hemodesmus Indicus, *R. Br.*
2636 Streptocaulon calophyllum, *Wight.*
2637 —— sylvestre, *Wight.*
2638 —— extensum, *Wight.*
2639 Finlaysonia obovata, *Wall.*

LOGANIACEÆ.

2640 Mitreola paniculata, *Wall.*
2641 —— pedicellata, *R. Br.*
2642 Mitrasacme nudicaulis, *Bth.*
2643 Gelsemium elegans, *Bth.*
2644 Gardneria ovata, *Wall.*
2645 —— angustifolia, *Wall.*
2646 Fagræa obovata, *Wall.*
2647 —— Khasiana, *Br.*
2648 Strychnos axillaris, *Colebr.*
2649 —— lucida, *Wall.*
2650 —— potatorum, *L.*
2651 —— Nux vomica, *L.*

GENTIANEÆ.

2652 Exacum tetragonum, *L.*
2653 —— teres, *Wall.*
2654 —— pedunculatum, *Griseb.*
2655 —— petiolare, *Griseb.*

2656 Sebæa Khasiana, *Clarke.*
2657 Erythræa ramosissima, *Pers.*
2658 Pladera pusilla, *Roxb.*
2659 Canscora diffusa, *Br.*
2660 —— decussata, *Roem. and Schult.*
2661 —— andrographioides, *Griff.*
2662 Slevogtia verticillata, *Don.*
2663 Gentiana detonsa, *Fries.*
2664 —— squarrosa, *Ledeb.*
2665 —— pedicellata, *Wall.*
2666 —— capitata, *Ham.*
2667 —— Andersoni, *Clarke.*
2668 —— decemfida, *Ham.*
2669 —— marginata, *Griseb.*
2670 —— nudicaulis, *Kz.*
2671 —— depressa, *Wall.*
2672 —— venusta, *Wall.*
2673 —— tubiflora, *Wall.*
2674 —— ornata, *Wall.*
2675 —— nubigena, *Edg.*
2676 Crawfurdia speciosa, *Wall.*
2677 —— fasciculata, *Wall.*
2678 —— luteo-viridis, *Clarke.*
2679 —— pùberula, *Clarke.*
2680 Pleurogyne Carinthiaca, *Griseb.*
2681 Ophelia cordata, *Don.*
2682 —— purpurascens, *Don.*
2683 —— paniculata, *Don.*
2684 —— nervosa, *Wall.*
2685 —— pulchella, *Don.*
2686 —— angustifolia, *Don.*
2687 —— macrosperma, *Clarke.*
2688 —— chirayta, *Griseb.*
2689 —— bimaculata, *S. and Z.*
2690 Halenia elliptica, *Don.*
2691 Swertia cunsata, *Wall.*
2692 Swertia speciosa, *Wall.*
2693 —— multicalis, *Don.*
2694 Limnanthemum cristatum, *Griseb.*
2695 —— Indicum, *Griseb.*

BIGNONIACEÆ.

2696 Payanelia multijuga, *Wall.*
2697 Calosanthes Indica, *Bl.*
2698 Millingtonia hortensis, *L. f.*
2699 Nyctocalos Thomsoni, *Hf.*
2700 Stereospermum chelonioides, *Dc.*
2701 —— suaveolens, *Dc.*
2702 Heterophragma Roxburghii, *Dc.*
2703 —— adenophylla, *Seem.*
2704 Spathodea Rheedei, *Wall.*

PEDALINEÆ.

2705 Buddleia paniculata, *Wall.*
2706 —— Neemda, *Ham.*
2707 —— Asiatica, *Lour.*
2708 —— macrostachya, *Bth.*
2709 —— Colvillei, *Hf. and Th.*
2710 Martynia proboscidea, *Sprg.*
2711 Pedalium murex, *L.*
2712 Sesamum Indicum, *L.*
2713 Wightia gigantea, *Wall.*

HYDROPHYLLACEÆ.

2714 Hydrolea Zeylanica, *Vhl.*

CONVOLVULACEÆ.

2715 Rivea tiliæfolia, *Chois.*
2716 —— ornata, *Chois.*
2717 Argyreia speciosa, *Chois.*
2718 —— populifolia, *Chois.*
2719 —— splendens, *Sw.*

2720 Argyreia elliptica, *Chois.*
2721 —— argentea, *Chois.*
2722 —— capitata, *Chois.*
2723 —— setosa, *Chois.*
2724 —— Griffithii, *Hf. and Th.*
2725 Quamoclit coccinea, *Chois.*
2726 —— vulgaris, *Chois.*
2727 Batatas edulis, *Chois.*
2728 —— paniculata, *Chois.*
2729 Pharbitis nil, *Chois.*
2730 Calonyction speciosum, *Chois.*
2731 Lepistemon flavescens, *Bl.*
2732 —— Wallichii, *Chois.*
2733 Ipomœa reniformis, *Chois.*
2734 —— reptans, *L.*
2735 —— pes capræ, *L.*
2736 —— tridentata, *Roth.*
2737 —— angustifolia, *Jacq.*
2738 —— campanulata, *L.*
2739 —— Turpethum, *R. Br.*
2740 —— vitifolia, *Sw.*
2741 —— cymosa, *Roxb.*
2742 —— denticulata, *Chois.*
2743 —— pes tigridis, *L.*
2744 —— pileata, *Roxb.*
2745 —— sessiliflora, *Chois.*
2746 —— sepiaria, *Koen.*
2747 —— chryseidis, *Ldl.*
2748 —— quinata, *Br.*
2749 Convolvulus parviflorus, *Vhl.*
2750 Aniseia uniflora, *Chois.*
2751 Calistegia oleracea, *Wall.*
2752 Shuteria bicolor, *Chois.*
2753 Porana volubilis, *Br.*
2754 —— racemosa, *Roxb.*
2755 —— paniculata, *Roxb.*
2756 —— grandiflora, *Wall.*
2757 —— stenoloba, *Kz.*
2758 Skinneria cæspitosa, *Chois.*
2759 Breweria Roxburghii, *Chois.*
2760 Evolvulvulus alsinoides, *L.*
2761 Cuscuta Europæa, *L.*
2762 —— reflexa, *Roxb.*
2763 Erycibe paniculata, *Roxb.*
2764 —— lævigata, *Wall.*

BORAGINEÆ.

2765 Cordia polygama, *Roxb.*
2766 —— Myxa, *L.*
2767 —— grandis, *Roxb.*
2768 —— latifolia, *Roxb.*
2769 Ehretia lævis, *Roxb.*
2770 —— serrata, *Roxb.*
2771 —— Wallichiana, *Hf. and Th.*
2772 —— acuminata, *Wall.*
2773 Rhabdia viminea, *Dalz.*
2774 Tournefortia viridiflora, *Wall.*
2775 —— Heyneana, *Wall.*
2776 Coldenia procumbens, *L.*
2777 Heliotropium supinum, *L.*
2778 —— Coromandelianum, *Lehm.*
2779 —— brevifolium, *Wall.*
2780 —— Indicum, *L.*
2781 Macaranga bicolor, *Wall.*
2782 —— Emodi, *Wall.*
2783 Bothriospermun diffusum, *Roxb.*
2784 —— subopposition, *Hf. and Th.*
2785 Eritrichium microcarpum, *Dc.*
2786 Echinospermum glochidiatum, *Dc.*
2787 Cynoglossum Wallichii, *Don.*

2788 Cynoglossum furcatum, *Wall.*
2789 —— micranthum, *Dc.*
2790 —— canescens, *Wall.*
2791 Trichodesma Zeylanicum, *R. Br.*
2792 —— Indicum, *R. Br.*

SOLANEÆ.

2793 Lycopersicum esculeatum, *Don.*
2794 Solanum tuberosum, *L.*
2795 —— nigrum, *L.*
2796 —— verbascifolium, *L.*
2797 —— spirale, *Roxb.*
2798 —— membranaceum, *Wall.*
2799 —— dentatum, *Roxb.*
2800 —— denticulatum, *Pl.*
2801 —— macrodon, *Wall.*
2802 —— lysimachioides, *Wall.*
2803 —— ferox, *L.*
2804 —— torvum, *L.*
2805 —— trilobatum, *Roxb.*
2806 —— Indicum, *L.*
2807 —— Melongena, *L.*
2808 —— sanctum, *L.*
2809 —— involucratum, *Bl.*
2810 —— xanthocarpum, *Schrad.*
2811 —— crassipetalum, *Wall.*
2812 Capsicum frutescens, *L.*
2813 —— minimum, *L.*
2814 —— baccatum, *L.*
2815 Nicandra physaloides, *Gaertn.*
2816 Physalis minima, *L.*
2817 —— angulata, *L.*
2818 —— Peruviana, *L.*
2819 Physalis Alkekengi, *L.*
2820 Withania somnifera, *Don.*
2821 Datura alba, *N. E.*
2822 —— fastuosa, *L.*
2823 —— Wallichii, *Dun.*
2824 —— Stramonium, *L.*
2825 —— Tatula, *L.*
2826 Scopolia lurida, *Don.*
2827 —— humilis, *Hf. and Th.*
2828 Nicotiana Tabacum, *L.*
2829 —— plumbaginifolia, *L.*
2830 —— rustica, *L.*

SCROPHULARINEÆ.

2831 Calceolaria glutinosa, *Reg.*
2832 Celsia Coromandeliana, *L.*
2833 Scrophularia pauciflora, *Bth.*
2834 —— elatior, *Wall.*
2835 —— urticæfolia, *Wall.*
2836 Alectra Indica, *Bth.*
2837 —— grandiflora, *Kz.*
2838 —— aphylla, *Kz.*
2839 Mimulus gracilis, *R. Br.*
2840 —— Nepalensis, *Wall.*
2841 Mazus surculosus, *Don.*
2842 —— rugosus, *Lour.*
2843 —— dentatus, *Wall.*
2844 Lindenbergia grandiflora, *Bth.*
2845 —— macrostachya, *Bth.*
2846 —— polyantha, *Royle.*
2847 —— urticæfolia, *Lehm.*
2848 Pterostigma capitatum, *Bth.*
2849 Stemodia viscosa, *Roxb.*
2850 Limnophila Menthastrum, *Bth.*
2851 —— hypericifolia, *Bth.*
2852 —— conferta, *Bth.*

2853 Limnophila micrantha, *Bth.*
2854 —— diffusa, *Bth.*
2855 —— hirsuta, *Bth.*
2856 —— punctata, *Bl.*
2857 —— gratioloides, *R. Br.*
2858 —— sessiliflora, *Bl.*
2859 —— heterophylla, *Bth.*
2860 —— racemosa, *Bth.*
2861 —— polystachya, *Bth.*
2862 Herpestis Hamiltoniana, *Bth.*
2863 —— floribunda, *Br.*
2864 —— Monniera, *H. B. K.*
2865 Dopatrium junceum, *Ham.*
2866 Curanga amara, *Juss.*
2867 Torenia cordifolia, *Roxb.*
2868 —— edentula, *Griff.*
2869 —— diffusa, *Bth.*
2870 —— parviflora, *Bth.*
2871 Vandellia crustacea, *Bth.*
2872 —— multiflora, *Bth.*
2873 —— scabra, *Bth.*
2874 —— mollis, *Bth.*
2875 —— erecta, *Bth.*
2876 —— nummulariæfolia, *Don.*
2877 —— pedunculata, *Bth.*
2878 —— angustifolia, *Bth.*
2879 Ilysanthes hyssopioides, *Bth.*
2880 —— parviflora, *Sprg.*
2881 Bonnaya brachiata, *Lk. and Ow.*
2882 —— reptans, *Bth.*
2883 —— veronicæfolia, *Bth.*
2884 —— verbenæfolia, *Spreng.*
2885 —— grandiflora, *Bth.*
2886 Glossostigma spathulatum, *Arn.*
2887 Hemiphragma heterophyllum, *Wall.*
2888 Scoparia dulcis, *L.*
2889 Microcarpæa muscosa, *W. A.*
2890 Digitalis purpurea, *L.*
2891 Picrorrhiza Kurroa, *Royle.*
2892 Veronica ciliata, *Fisch.*
2893 —— Anagallis, *L.*
2894 —— laxa, *Bth.*
2895 —— Maddeni, *Edg.*
2896 —— cana, *Wall.*
2897 —— capitata, *Royle.*
2898 —— lanuginosa, *Bth.*
2899 Buchnera cruciata, *Ham.*
2900 —— hispida, *Lamk.*
2901 Striga hirsuta, *Bth.*
2902 —— euphrasioides, *Bth.*
2903 Sopubia delphinifolia, *Don.*
2904 —— stricta, *Don.*
2905 —— trifida, *Don.*
2906 Centranthera grandiflora, *Don.*
2907 —— hispida, *R. Br.*
2908 —— humifusa, *Wall.*
2909 Pedicularis Hookeriana, *Wall.*
2910 —— siphonantha, *Wall.*
2911 —— tubiflora, *Fisch.*
2912 —— furfuracea, *Wall.*
2913 —— carnosa, *Wall.*
2914 —— gracilis, *Wall.*
2915 —— brevifolia, *Dene.*
2916 —— verticillata, *L.*
2917 —— mollis, *Wall.*
2918 —— megalantha, *Don.*
2919 Lancea Tibetica, *Hf. and Th.*

LENTIBULARIEÆ.

2920 Utricularia stellaris, *L.*
2921 —— flexuosa, *Vhl.*

2922 Utricularia diantha, *Roem. and Schalt.*
2923 —— reticulata, *Sm.*
2924 —— bifida, *L.*
2925 —— Wallichiana, *Wight.*
2926 —— hirta, *Klein.*
2927 —— rosea, *Edg.*
2928 —— racemosa, *Wall.*
2929 —— nivea, *Vhl.*
2930 —— brachiata, *Oliv.*
2931 —— orbiculata, *Wall.*
2932 —— multicaulis, *Oliv.*
2933 —— furcellata, *Oliv.*
2934 Pinguicula alpina, *L.*

OROBANCHEÆ.

2935 Philipæa Indica, *Don.*
2936 Boschniakia Himalaica, *Hf. and Th.*
2937 Christisonia subacaulis, *Gardn.*
2938 Æginetia Indica, *Roxb.*
2939 —— pedunculata, *Roxb.*

GESNERIACEÆ.

2940 Æschynanthus bracteata, *Wall.*
2941 —— Peelii, *Hf. and Th.*
2942 —— acuminata, *Wall.*
2943 —— longiflora, *Wall.*
2944 —— gracilis, *Parish.*
2945 —— parasitica, *Roxb.*
2746 —— ramosissima, *Wall.*
2947 Lysionotus ternifolius, *Wall.*
2948 Dichrotrichum Griffithii, *Clarke.*
2949 Didymocarpus Punduana, *Wall.*
2950 —— Hookeri, *Clarke.*
2951 Didymocarpus subalternans, *Wall.*
2952 —— oblongus, *Wall.*
2953 —— aromaticus, *Wall.*
2954 —— Bivari, *Clarke.*
2955 —— villosus, *Wall.*
2956 —— aurantiacus, *Clarke.*
2957 —— obtusus, *Wall.*
2958 —— Andersoni, *Clarke.*
2959 —— macrophyllus, *Wall.*
2960 —— Mortoni, *Clarke.*
2961 —— lanuginosus, *Wall.*
2962 Chirita urticæfolia, *Ham.*
2963 —— Hookeri, *Clarke.*
2964 —— macrophylla, *Wall.*
2965 —— Kurzii, *Clarke.*
2966 —— glabra, *Miq.*
2967 —— polyneura, *Miq.*
2968 —— bifolia, *Don.*
2969 —— hamosa, *R. Br.*
2970 —— speciosa, *Kz.*
2971 —— primulacea, *Clarke.*
2972 —— acuminata, *R. Br.*
2973 Baea flocculosa, *Clarke.*
2974 Baeica fulva, *Clarke.*
2975 —— Griffithii, *Clarke.*
2976 —— capillaris, *Clarke.*
2977 Rhynchoglossum obliquum, *Bl.*
2978 Stauranthera umbrosa, *Griff.*
2979 Epithemia carnosum, *Bth.*
2980 Championia multiflora, *Clarke.*
2981 Rhynchotichum ellipticum, *Dc.*
2982 —— vestitum, *Dc.*
2983 —— latifolium, *Hf. and Th.*

ACANTHACEÆ.

2984 Thunbergia grandiflora, *Roxb.*
2985 —— laurifolia, *Ldl.*
2986 —— lutea, *T. And.*
2987 —— coccinea, *Wall.*
2988 —— fragrans, *Roxb.*
2989 Elythraria crenata, *Vhl.*
2990 Nelsonia tomentosa, *Willd.*
2991 Ebermaiera glauca, *N. E.*
2992 —— Staurogyne, *N. E.*
2993 —— argentea, *N. E.*
2994 —— Simonsii, *T. And.*
2995 —— paniculata, *Wall.*
2996 Adenosma triflora, *N. E.*
2997 —— Griffithii, *T. And.*
2998 —— uliginosa, *R. Br.*
2999 Hemiadelphis polysperma, *N. E.*
3000 Hygrophila salicifolia, *N. E.*
3001 —— longifolia, *Kz.*
3002 Echinacanthus attenuatus, *N. E.*
3003 —— parviflorus, *T. And.*
3004 Calophanes Nagchana, *Ham.*
3005 —— depressa, *T. And.*
3006 Ruellia prostrata, *Poir.*
3007 —— cernua, *Roxb.*
3008 —— suffruticosa, *Roxb.*
3009 Petalidium barlerioides, *N. E.*
3010 Phaylopsis parviflora, *Willd.*
3011 Hemigraphis hirta, *T. And.*
3012 —— elegans, *N. E.*
3013 Strobilanthes scaber, *N. E.*
3014 —— decurrens, *T. And.*
3015 —— fimbriatus, *N. E.*
3016 —— polythrix, *T. And.*
3017 Strobilanthes Khasyanus, *T. And.*
3018 —— auriculatus, *N. E.*
3019 —— Sabinianus, *N. E.*
3020 —— Brunonianus, *N. E.*
3021 —— maculatus, *N. E.*
3022 —— acrocephalus, *T. And.*
3023 —— pectinatus, *T. And.*
3024 —— Simonsii, *T. And.*
3025 —— glabratus, *N. E.*
3026 —— gracilis, *T. And.*
3027 —— glomeratus, *T. And.*
3028 —— capitatus, *T. And.*
3029 —— laminifolius, *T. And.*
3030 —— alatus, *N. E.*
3031 —— extensus, *N. E.*
3032 —— inflatus, *T. And.*
3033 —— Wallichii, *N. E.*
3034 —— urophyllus, *N. E.*
3035 —— penstemonoides, *T. And.*
3036 —— discolor, *T. And.*
3037 —— isophyllus, *T. And.*
3038 —— anisophyllus, *T. And.*
3039 —— Thomsoni, *T. And.*
3040 —— divariactus, *T. And.*
3041 —— Panichanga, *T. And.*
3042 —— boerhaavioides, *T. And.*
3043 —— rubescens, *T. And.*
3044 —— Helictus, *T. And.*
3045 —— secundus, *T. And.*
3046 —— flaccidifolius, *N. E.*
3047 —— Griffithianus, *T. And.*
3048 —— coloratus, *T. And.*
3049 —— crinitus, *T. And.*
3050 —— Mastersi, *T. And.*
3051 —— denticulatus, *T. And.*
3052 —— spicatus, *T. And.*
3053 —— violæfolius, *T. And.*

3054 Æchmanthera Wallichii, *N. E.*
3055 Dædalacanthus tubiflorus, *T. And.*
3056 —— splendens, *T. And.*
3057 —— Griffithii, *T. And.*
3058 —— nervosus, *T. And.*
3059 —— scaber, *T. And.*
3060 —— strictus, *T. And.*
3061 —— purpurascens, *T. And.*
3062 Barleria Prionitis, *L.*
3063 —— cristata, *L.*
3064 —— cœrulea, *Roxb.*
3065 Crossandra infundibuliformis, *N. E.*
3066 Lepidagathis cristata, *Willd.*
3067 —— trinervis, *N. E.*
3068 —— purpuricaulis, *N. E.*
3069 —— incurva, *Ham.*
3070 —— mucronata, *N. E.*
3071 —— fasciculata, *N. E.*
3072 Blepharis boerhaaviæfolia, *Pers.*
3073 Acanthus carduaceus, *Griff.*
3074 —— leucostachyus, *Wall.*
3075 —— ilicifolius, *L.*
3076 —— ebracteatus, *Vhl.*
3077 —— volubilis, *Wall.*
3078 Andrographis paniculata, *N. E.*
3079 —— echioides, *N. E.*
3080 Gymnostachyum andrographioides, *T. And.*
3081 —— venustum, *T. And.*
3082 Phlogacanthus thyrsiflorus, *N. E.*
3083 —— curviflorus, *N. E.*
3084 —— tubiflorus, *N. E.*
3085 —— parviflorus, *T. And.*
3086 Phlogacanthus guttatus, *N. E.*
5087 —— vitellinus, *T. And.*
3088 —— pubinervius, *T. And.*
3089 Justicia Adhatoda, *L.*
3090 —— Atkinsoni, *T. And.*
3091 —— Betonica, *L.*
3092 —— peploides, *T. And.*
3093 —— procumbens, *L.*
3094 —— orbiculata, *Wall.*
3095 —— diffusa, *Willd.*
3096 —— Gendarussa, *L.*
3097 —— Neesiana, *Wall.*
3098 —— salicifolia, *T. And.*
3099 —— quadrifaria, *Wall.*
3100 —— vasculosa, *Wall.*
3101 —— collina, *T. And.*
3102 —— virgata, *Wall.*
3103 —— Griffithii, *T. And.*
3104 Rungia pectinata, *N. E.*
3105 —— repens, *N. E.*
3106 —— Punduana, *N. E.*
3107 —— Khasiana, *T. And.*
3108 —— Mastersi, *T. And.*
3109 Dicliptera Roxburghii, *N. E.*
3110 —— micrantha, *N. E.*
3111 Peristrophe bicalyculata, *N. E.*
3112 —— speciosa, *N. E.*
3113 —— tinctoria, *N. E.*
3114 —— montana, *N. E.*
3115 —— acuminata, *N. E.*
3116 —— lanceolaria, *N. E.*
3117 Hypoëstes triflora, *Roem. and Schult.*
3118 Rhinacanthus nasuta, *N. E.*
3119 —— calcaratus, *N. E.*
3120 Graptophyllum hortense, *N. E.*
3121 Ecbolium Linneanum, *Kz.*

3122 Eranthemum crenulatum, *Vhl.*
3123 —— palatiferum, *N. E.*
3124 Codonacanthus pauciflorus, *N. E.*
3125 Asystasia Gangetica, *T. And.*
3126 —— macrocarpa, *N. E.*
3127 —— thyrsacanthus, *T. And.*
3128 —— Neesiana, *N. E.*
3129 —— atroviridis, *T. And.*

VERBENACEÆ.

3130 Verbena officinalis, *L.*
3131 —— Bonariensis, *L.*
3132 Stachytarpheta Indica, *Vhl.*
3133 Lippia nodiflora, *Rich.*
3134 Lantana alba, *Mill.*
3135 —— trifoliata, *L.*
3136 —— mixta, *Schau.*
3137 Sphenodesma Wallichiana, *Schau.*
3138 —— Jackiana, *Schau.*
3139 Congea tomentosa, *Roxb.*
3140 Caryopteris Wallichiana, *Schau.*
3141 Tectona grandis, *L.*
3142 Premna serratifolia, *L.*
3143 —— scandens, *Roxb.*
3144 —— racemosa, *Wall.*
3145 —— interrupta, *Wall.*
3146 —— longifolia, *Roxb.*
3147 —— micrantha, *Schau.*
3148 —— mucronata, *Roxb.*
3149 —— barbata, *Roxb.*
3150 Premna herbacea, *L.*
3151 —— Punduana, *Wall.*
3152 Callicarpa tomentosa, *Willd.*
3153 Callicarpa Wallichiana *Walp.*
3154 —— arborea, *Roxb.*
3155 —— Reevesii, *Wall.*
3156 —— cana, *L.*
3157 —— macrophylla, *Vhl.*
3158 —— rubella, *Ldl.*
3159 —— longifolia, *Lamk.*
3160 Clerodendron inerme, *R. Br.*
3161 —— nutans, *Wall.*
3162 —— serratum, *L.*
3163 —— bracteatum, *Wall.*
3164 —— fragrans, *L.*
3165 —— infortunatum, *L.*
3166 —— splendidum, *Griff.*
3167 —— squamatum, *Vhl.*
3168 —— dentatum, *Wall.*
3169 —— Siphonanthus, *R. Br.*
3170 —— hastatum, *Wall.*
3171 —— Colebrookeanum, *Walp.*
3172 —— gratum, *Wall.*
3173 Gmelina arborea, *L.*
3174 Vitex trifolia, *L.*
3175 —— Negundo, *L.*
3176 —— pubescens, *Vhl.*
3177 —— canescens, *Kz.*
3178 —— heterophylla, *Roxb.*
3179 —— peduncularis, *Wall.*
3180 Holmskioldia sanguinea, *Retz.*
3181 Avicennia tomentosa, *Roxb.*
3182 —— officinalis, *L.*

PHRYMACEÆ.

3183 Phryma leptostachya, *L.*

SELAGINEÆ.

3184 Gymnandra spectabilis, *Kz.*

LABIATÆ.

3185 Ocymum canum, *Linn.*
3186 —— Basilicum, *L.*
3187 —— gratissimum, *L.*
3188 —— sanctum, *L.*
3189 Geniosporum strobiliferum, *Wall.*
3190 Mesona Wallichiana, *Bth.*
3191 Acrocephalus capitatus, *Bth.*
3192 Moschosma polystachya, *Bth.*
3193 Orthosiphon rubicundus, *Bth.*
3194 —— incurvus, *Bth.*
3195 —— staminens, *Bth.*
3196 Plectranthus scrophularioides, *Wall.*
3197 —— Gerardianus, *Bth.*
3198 —— striatus, *Bth.*
3199 —— hispidus, *Bth.*
3200 —— repens, *Wall.*
3201 —— coetsa, *Don.*
3202 —— ternifolius, *Bth.*
3203 —— melissoides, *Bth.*
3204 —— cordifolius, *Bth.*
3205 Anisochilus carnosus, *Wall.*
3206 —— pallidus, *Wall.*
3207 —— polystachyus, *Bth.*
3208 Pogostemon plectranthoides, *Desf.*
3209 —— parviflorus, *Bth.*
3210 —— glaber, *Bth.*
3211 —— tuberculosus, *Bth.*
3212 —— amarantoides, *Bth.*
3213 —— elsholtzioides, *Bth.*
3214 —— strigosus, *Bth.*
3215 —— brachystachyus, *Roxb.*
3216 Dysophylla auricularia, *Bl.*
3217 —— cruciata, *Bth.*
3218 Dysophylla quadrifolia, *Bth.*
3219 —— linearis, *Bth.*
3220 —— verticillata, *Bth.*
3221 Colebrookia oppositifolia, *Sm.*
3222 Elsholtzia flava, *Bth.*
3223 —— polystachya, *Bth.*
3224 —— blanda, *Bth.*
3225 —— incisa, *Bth.*
3226 —— pilosa, *Bth.*
3227 —— densa, *Bth.*
3228 —— pusilla, *Bth.*
3229 —— strobilifera, *Bth.*
3230 —— cristata, *Willd.*
3231 Perilla ocymoides, *L.*
3232 Ocimum vulgare, *L.*
3233 Calamintha umbrosa, *Bth.*
3234 Melissa parviflora, *Bth.*
3235 Hedeoma Nepalensis, *Bth.*
3236 Meriandra Bengalensis, *Bth.*
3237 Salvia glutinosa, *L.*
3238 —— campanulata, *Wall.*
3239 —— saxicola, *Wall.*
3240 —— plebeja, *R. Br.*
3241 Nepeta ruderalis, *Ham.*
3242 —— lamiopsis, *Bth.*
3243 Anisomeles ovata, *R. Br.*
3244 Dracocephalum speciosum, *Bth.*
3245 Brunella vulgaris, *L.*
3246 Scutellaria discolor, *Colebr.*
3247 —— violacea, *Bth.*
3248 —— rivularis, *Wall.*
3249 —— repens, *Ham.*
3250 Craniotome versicolor, *Bth.*
3251 Leonurus sibiricus, *L.*
3252 Colquhounia coccinea, *Wall.*
3253 —— vestita, *Wall.*

3254 Achyrospermum densiflorum, *Bl.*
3255 Stachys melissæfolia, *Bth.*
3256 —— oblongifolia, *Bth.*
3257 Leucas lanata, *Bth.*
3258 —— mollissima, *Wall.*
3259 —— pilosa, *Bth.*
3260 —— procumbens, *Desf.*
3261 —— ciliata, *Bth.*
3262 —— diffusa, *Bth.*
3263 —— aspera, *Spreng.*
3264 —— cephalotes, *Spreng.*
3265 —— linifolia, *Spreng.*
3266 Leonotis nepetæfolia, *R. Br.*
3267 Phlomis breviflora, *Bth.*
3268 —— macrophylla, *Wall.*
3269 —— lamiifolia, *Royle.*
3270 —— rugosa, *Bth.*
3271 —— rotata, *Bth.*
3272 Nothochæte hamosa, *Bth.*
3273 Eriophyton Wallichianum, *Bth.*
3274 Gomphostema oblongum, *Wall.*
3275 —— lucidum, *Bth.*
3276 —— parviflorum, *Bth.*
3277 —— ovatum, *Wall.*
3278 —— melissæfolium, *Wall.*
3279 —— velutinum, *Bth.*
3280 —— Mastersii, *Bth.*
1281 —— pendunculatum, *Bth.*
3282 —— Thomsoni, *Bth.*
3283 Teucrium macrostachyum,
3284 —— stoloniferum, *Ham.*
3285 —— quadrifarium, *Ham.*
3286 Ajuga lobata, *Dc.*
3287 —— decumbens, *Thbg.*
3288 —— macrosperma, *Wall.*

PHYTOLACCACEÆ.

3289 Coriaria Nepalensis, *Wall.*
3290 Pircunia Latbenia, *Moq.*

PLANTAGINEÆ.

3291 Plantago major, *L.*

CHENOPODEÆ.

3292 Beta maritima, *L.*
3293 Chenopodium album, *L.*
3294 —— ambrosioides, *L.*
3295 Salicornia herbacea, *L.*
3296 Chenopodina maritima, *Moq.*
3297 Suaeda fruticosa, *Forsk.*
3298 —— nudiflora, *Moq.*
3299 Basella rubra, *L.*
3300 —— alba, *L.*

AMARANTACEÆ.

3301 Deeringia baccata, *Moq.*
3302 Celosia cristata, *L.*
3303 —— argentea, *Moq.*
3304 Chamissoa nodiflora, *Moq.*
3305 Acroglochin chenopodioides, *Schrad.*
3306 Amarantus caudatus, *L.*
3307 —— paniculatus, *Moq.*
3308 —— Anardana, *Ham.*
3309 —— spinosus, *L.*
3310 —— Gangeticus, *L.*
3311 —— Mangostanus, *L.*
3312 —— Blitum, *L.*
3313 —— atropurpureus, *Roxb.*
3314 —— frumentaceus, *L.*
3315 —— polystachyus, *Willd.*
3316 —— viridis, *L.*
3317 —— caudatus, *Moq.*
3318 —— oleraceus, *L.*
3319 Mengea tenuifolia, *Moq.*

3320 Psilotrichum trichotomum, *Bl.*
3321 Aerva Javanica, *Juss.*
3322 —— scandens, *Wall.*
3323 —— monsoniæ, *Moq.*
3324 —— lanata, *Juss.*
3325 Achyranthes bidentata, *Bl.*
3326 —— aspera, *L.*
3327 —— porphyrostachya, *Wall.*
3328 —— scandens, *Hf. and Th.*
3329 Centrostachys aquatica, *Wall.*
3330 Digera arvensis, *Forsk.*
3331 Pupalia lappacea, *Dc.*
3332 —— velutina, *Moq.*
3333 Cyathula prostrata, *Bl.*
3334 —— tomentosa, *Moq.*
3335 —— capitata, *Moq.*
3336 Alternanthera nodiflora, *R. Br.*
3337 —— sessilis, *R. Br.*
3338 Gomphrena globosa, *L.*

NYCTAGINEÆ.

3339 Mirabilis Jalappa, *L.*
3340 Boerhaavia diffusa, *L.*
3341 —— repanda, *L.*

POLYGONACEÆ.

3342 Rumex Wallichii, *Meissn.*
3343 —— Nepalensis, *Spreng.*
3344 —— dentata, *Camb.*
3345 —— acetosella, *L.*
3346 —— vesicarius, *L.*
3347 —— hastatus, *Don.*
3348 Koeniga Islandica, *L.*
3349 Rheum Emodi, *Wall.*
3350 —— acuminatum, *Hf. and Th.*
3351 Rheum nobile, *Hf.*
3352 Oxyria reniformis, *R. Br.*
3353 Polygonum Roxburghii, *Meissn.*
3354 —— plebejum, *R. Br.*
3355 —— herniarioides, *Del.*
3356 —— Dryandri, *Spreng.*
3357 —— viscosum, *Ham.*
3358 —— barbatum, *L.*
3359 —— Donii, *Meissn.*
3360 —— Posumbo, *Ham.*
3361 —— flaccidum, *Roxb.*
3362 —— Hydropiper, *L.*
3363 —— mite, *Schrank.*
3364 —— glabrum, *Willd.*
3365 —— lanigerum, *R. Br.*
3366 —— lapathifolium, *Ait.*
3367 —— orientale, *L.*
3368 —— tomentosum, *Willd.*
3369 —— paleaceum, *Wall.*
3370 —— sphærostachyum, *Meisn.*
3371 —— speciosum, *Meisn.*
3372 —— amplexicaule, *Don.*
3373 —— vacciniæfolium, *Wall.*
3374 —— affine, *Don.*
3375 —— Emodi, *Meisn.*
3376 —— delicatulum, *Meisn.*
3377 —— nummulariæfolium, *Meisn.*
3378 —— filicaule, *Wall.*
3379 —— perforatum, *Meisn.*
3380 —— Nepalense, *Meisn.*
3381 —— Wallichii, *Meisn.*
3382 —— microcephalum, *Don.*
3383 —— capitatum, *Ham.*
3384 —— runcinatum, *Ham.*
3385 —— sinuatum, *Royle.*
3386 —— Chinense, *L.*

3387 Polygonum Hamiltonii, *Meisn.*
3388 —— perfoliatum, *L.*
3389 —— horridum, *Roxb.*
3390 —— pedunculare, *Wall.*
3391 —— strigosum, *R. Br.*
3392 —— pterocarpum, *Wall.*
3393 —— molle, *Wall.*
3394 —— polystachyum, *Wall.*
3395 —— paniculatum, *R. Br.*
3396 —— flaccidum, *Roxb.*
3397 Fagopyrum esculentum, *Moench.*
3398 —— cymosum, *Meisn.*
3399 —— Tataricum, *Gaertn.*

LAURINEÆ.

3400 Cinnamomum Cassia, *Bl.*
3401 —— obtusifolium, *N. E.*
3402 —— pauciflorum, *N. E.*
3403 —— Tamala, *N. E.*
3404 —— impressinervium, *Meisn.*
3405 —— caudatum, *N. E.*
3406 —— glanduliferum, *Meisn.*
3407 Phoebe lanceolata, *N. E.*
3408 —— angustifolia, *Meisn.*
3409 —— sericea, *N. E.*
3410 —— glaucescens, *N. E.*
3411 —— paniculata, *N. E.*
3412 —— pubescens, *N. E.*
3413 —— attenuata, *N. E.*
3414 —— parviflora, *Meisn.*
3415 Machilus odoratissimus, *N. E.*
3416 Beilschmiedia Roxburghiana, *N. E.*
3417 —— fagifolia, *N. E.*
3418 —— Assamica, *Meisn.*
3419 Cryptocarya floribunda, *N. E.*
3420 —— amygdalina, *N. E.*
3421 —— magnoliæfolia, *T. And.*
3422 Endiandra firma, *N. E.*
3423 Tetranthera laurifolia, *Jacq.*
3424 —— polyantha, *Wall.*
3425 —— glauca, *Wall.*
3426 —— Khasyana, *Meisn.*
3427 —— chartacea, *Wall.*
3428 —— læta, *Wall.*
3429 —— Sikkimensis, *Meisn.*
3430 —— monopetala, *Roxb.*
3431 —— amara, *N. E.*
3432 —— Griffithii, *Meisn.*
3433 —— lancifolia, *Roxb.*
3434 —— Panamonja, *Ham.*
3435 —— sericea, *Wall.*
3436 —— Wightiana, *N. E.*
3437 —— nitida, *Meisn.*
3438 —— oblonga, *Wall.*
3439 —— albicans, *Kz.*
3440 —— angustifolia, *Wall.*
3441 Dodecadenia grandiflora, *N. E.*
3442 Actinodaphne reticulata, *Meisn.*
3443 —— angustifolia, *N. E.*
3444 —— Hookeri, *Meisn.*
3445 —— obovata, *Hf. and Th.*
3446 —— Sikkimensis, *Meisn.*
3447 Litsæa lanuginosa, *N. E.*
3448 —— foliosa, *N. E.*
3449 —— striolata, *Bl.*
3450 —— confertiflora, *Meisn.*
3451 Daphnidium melastomaceum, *N. E.*
3452 —— pulcherrimum, *N. E.*

3453 Daphnidium caudatum, *Wall.*
3454 —— bifarium, *N. E.*
3455 —— elongatum, *N. E.*
3456 Aperula Neesiana, *Bl.*
3457 —— Assamica, *Meisn.*
3458 —— polyantha, *Bl.*
3459 Lindera Bootanica, *Meisn.*
3460 —— Griffithii, *Meisn.*
3461 —— Sikkimensis, *Meisn.*
3462 —— Hookeri, *Meisn.*
3463 —— heterophylla, *Meisn.*
3464 Polyadenia reticulata, *N. E.*
3465 Cassytha filiformis, *L.*

MYRISTICEÆ.

3466 Myristica longifolia, *Wall.*
3467 —— erratica, *Hf. and Th.*
3468 —— gibbosa, *Hf. and Th.*
3469 —— corticosa, *Hf. and Th.*
3470 —— glabra, *Bl.*

PROTEACEÆ.

3471 Helicia robusta, *Wall.*
3472 —— Cochinchinensis, *Lour.*

THYMELAEACEÆ.

3473 Daphne papyracea, *Wall.*
3474 —— pendula, *Sm.*
3475 —— Wallichii, *Meisn.*
3476 —— longifolia, *Meisn.*
3477 Aquilaria Agallocha, *Roxb.*
3478 Gyrinops Walla, *Gaertn.*
3479 Linostoma decandrum, *Wall.*
3480 Edgeworthia Gardneri, *Meisn.*
3481 Wickstroemia Indica, *C. A. Mey.*
3482 Wickstroemia virgata, *Meisn.*
3483 —— canescens, *Meisn.*
3484 Stichoneuron membranaceum, *Hf. and Th.*

LORANTHACEÆ.

3485 Loranthus odoratus, *Wall.*
3486 —— ligustrinus, *Wall.*
3487 —— Wallichianus, *Schult.*
3488 —— pentapetalus, *Roxb.*
3489 —— erythrostachys, *Wall.*
3490 —— ampullaceus, *Roxb.*
3491 —— viridiflorus, *Wall.*
3492 —— oleoides, *Dc.*
3493 —— globosus, *Roxb.*
3494 —— pentandrus, *L.*
3495 —— farinosus, *Wall.*
3496 —— involucratus, *Roxb.*
3497 —— obtectus, *Wall.*
3498 —— graciliflorus, *Wall.*
3499 —— cinnamomeus, *Wall.*
3500 —— pulverulentus, *Wall.*
3501 —— cordifolius, *Wall.*
3502 —— buddleioides, *Desr.*
3503 —— vestitus, *Wall.*
3504 —— longiflorus, *Desv.*
3505 —— bicolor, *Roxb.*
3506 —— umbellatus, *Wall.*
3507 —— clavigerus, *Wall.*
3508 Viscum album, *L.*
3509 —— orientale, *Willd.*
3510 —— falcatum, *Wall.*
3511 —— articulatum, *Burm.*
3512 —— moniliforme, *Bl.*
3513 —— elongatum, *Wall.*
3514 —— dichotomum, *Don.*
3515 —— attenuatum, *Dc.*

ELAEAGNACEÆ.

3516 Elaeagnus latifolia, *L.*
3517 —— arborea, *Roxb.*
3518 —— conferta, *Roxb.*
3519 —— parvifolia, *Wall.*

SANTALACEÆ.

3520 Pyrularia edulis, *Dc.*
3521 Henslowia granulata, *Hf. and Th.*
3522 —— heterandra, *Hf.*
3523 Santalum album, *L.*
3524 Champereya Griffithii, *Planch.*

CERATOPHYLLEÆ.

3525 Ceratophyllum demersum, *L.*

ARISTOLOCHIEÆ.

3526 Asarum Himalaicum, *Hf. and Th.*
3527 Aristolochia Indica, *L.*
3528 —— acuminata, *Lamk.*
3529 —— Griffithii, *Hf. and Th.*
3530 —— saccata, *Wall.*
3531 —— platanifolia, *Duch.*

NEPENTHACEÆ.

3532 Nepenthes Khasiana, *Hf.*

EUPHORBIACEÆ.

3533 Actephila excelsa, *Muell. Arg.*
3534 Agyneia bacciformis, *Muell. Arg.*
3535 Sauropus albicans, *Muell. Arg.*
3536 —— trinervius, *Muell. Arg.*
3537 Sauropus compressus, *Muell. Arg.*
3538 —— repandus, *Muell. Arg.*
3539 Antidesma Bunias, *Spreng.*
3540 —— Menasu, *Muell. Arg.*
3541 —— coriaceum, *Tul.*
3542 —— refractum, *Muell. Arg.*
3543 —— nigricans, *Tul.*
3544 —— Ghaesembilla, *Gaertn.*
3545 —— Roxburghii, *Wall.*
3546 —— montanum, *Bl.*
3547 —— diandrum, *Sprg.*
3548 —— lanceolatum, *Tul.*
3549 Phyllanthus coccineus, *Muell. Arg.*
3550 —— lanceolarius, *Muell. Arg.*
3551 —— leiostylus, *Kz.*
3552 —— multilocularis, *Muell. Arg.*
3553 —— Thomsoni, *Muell. Arg.*
3554 —— Nepalensis, *Muell. Arg.*
3555 —— Daltoni, *Muell. Arg.*
3556 —— fagifolius, *Muell. Arg.*
3557 —— velutinus, *Muell. Arg.*
3558 —— bicolor, *Muell. Arg.*
3559 —— Andersoni, *Muell. Arg.*
3560 —— Hookeri, *Muell. Arg.*
3561 —— velutinus, *Muell. Arg.*
3562 —— urinaria, *L.*
3563 —— pendulus, *Roxb.*
3564 —— reticulatus, *Poir.*
3565 —— microcarpus, *Muell Arg.*

3566 Phyllanthus baeobotryoides, *Muell. Arg.*
3567 —— juniperinoides, *Muell. Arg.*
3568 —— Maderaspatensis, *Muell. Arg.*
3569 —— Silhetıcus, *Mucll. Arg.*
3570 —— Roeperianus, *Muell. Arg.*
3571 —— parvifolius, *Ham.*
3572 —— simplex, *Retz.*
3573 —— Nizuri, *L.*
3574 —— Roxburghii, *Muell. Arg.*
3575 —— Sikkimensis, *Muell. Arg.*
3576 —— distichus, *L.*
3577 —— Emblica, *L.*
3578 Securinega obovata, *Muell. Arg.*
3579 —— grisea, *Muell. Arg.*
3580 Breynia rhamnoides, *Muell. Arg.*
3581 Melanthesopsis fruticosa, *Mucll. Arg.*
3582 —— patens, *Muell. Arg.*
3583 Putranjiva Roxburghii, *Wall.*
3584 Baccaurea propinqua, *Muell. Arg.*
3585 Aporosa microstachya, *Mucll. Arg.*
3586 —— dioica, *Muell. Arg.*
3587 —— Lindleyana, *Baill.*
3588 Hymenocardia Wallichii, *Tul.*
3589 Bischoffia Javanica, *Bl.*
3590 Cyclostemon subsessile, *Kz.*
3591 Cyclostemon Indicus, *Muell. Arg.*
3592 —— eglandulosus, *Kz.*
3593 Briedelia retusa, *Sprg.*
3594 —— montana, *Willd.*
3595 —— Hamiltoniana, *Muell. Arg.*
3596 —— tomentosa, *Bl.*
3597 —— stipularis, *Bl.*
3598 Cleistanthus chartaceus, *Muell. Arg.*
3599 —— oblongifolius, *Muell. Arg.*
3600 —— myrianthus, *Kz.*
3601 Lebidieropsis orbicularis, *Muell. Arg.*
3602 Croton oblongifolius, *Roxb.*
3603 —— Jouffra, *Roxb.*
3604 —— caudatus, *Geis.*
3605 —— Tiglium, *L.*
3606 —— chlorocalyx, *Muell.*
3607 Aleurites Moluccana, *Willd.*
3698 Crozophora plicata, *Juss.*
3609 Symphyllia Silhetana, *Baill.*
3610 Pluckenetia corniculata, *Sm.*
3611 Acalypha Indica, *L.*
3612 Claoxylon longipetiolatum, *Kz.*
5613 —— longifolium, *Muell. Arg.*
3614 Alchornea tiliæfolia, *Muell. Arg.*
3615 Cnesmone Javanica, *Bl.*
3616 Tragia involucrata, *Jacq.*
3617 Trewia nudiflora, *Willd.*
3618 Mallotus Roxburghianus, *Muell. Arg.*

3619 Mallotus oreophilus, *Muell. Arg.*
3620 —— tetracoccus, *Kz.*
3621 —— Nepalensis, *Muell. Arg.*
3622 —— paniculatus, *Muell. Arg.*
3623 —— Philipinensis, *Muell. Arg.*
3624 —— repandus, *Muell. Arg.*
3625 Cleidion Javanicus, *Bl.*
3626 Macaranga denticulata, *Muell. Arg.*
3627 Ricinus communis, *L.*
3628 Homonoya symphylliæfolia, *Kz.*
3629 —— riparia, *Lour.*
3630 Manihot utilissima, *Pohl.*
3631 Jatropha curcas, *L.*
3632 —— glandulifera, *Roxb.*
3633 Trigonostemon Hookerianus, *Muell. Arg.*
3634 Ostodes paniculata, *Bl.*
3635 Codiæum variegatum, *A. Juss.*
3636 Chætocarpus castaneæcarpus, *Thw.*
3637 Baliospermum calycinum, *Muell. Arg.*
3638 —— montanum, *Muell. Arg.*
3639 —— micranthum, *Muell. Arg.*
3640 Gelonium multiflorum, *Juss.*
3641 Sebastiania chamælea, *Muell. Arg.*
3642 Excœcaria sebifera, *Muell. Arg.*
3643 —— baccata, *Muell. Arg.*
3644 Excœcaria insignis, *Muell. Arg.*
3645 —— Indica, *Muell. Arg.*
3646 —— acerifolia, *Didr.*
3647 —— Agallocha, *L.*
3648 Euphorbia Indica, *Lam.*
3649 —— pilulifera, *L.*
3650 —— serpens, *Kth.*
3651 —— thymifolia, *Burm.*
3652 —— neriifolia, *L.*
3653 —— Nivulia, *Ham.*
3654 —— antiquorum, *L.*
3655 —— Tirucalli, *L.*
3656 —— Himalayensis, *Klotsch.*
3657 —— Khasiana, *Boiss.*
3658 —— Sikkimensis, *Boiss.*
3659 —— Stracheyi, *Boiss.*
3660 —— longifolia, *Don.*
3661 —— dracunculoides, *Lam.*
3662 Pedilanthes tithymaloides, *Poir.*

BUXACEÆ.

3663 Sarcococca pruniformis, *Ldl.*

CUPULIFERÆ.

3664 Quercus Griffithii, *Hf.*
3665 —— serrata, *Thbg.*
3666 —— lanuginosa, *Don.*
3667 —— fenestrata, *Roxb.*
3668 —— turbinata, *Roxb.*
3669 —— spicata, *Sm.*
3670 —— lappacea, *Roxb.*
3671 —— acuminata, *Roxb.*
3672 —— Thomsoniana, *Dc.*
3673 —— pachyphylla, *Kurz.*
3674 —— semiserrata, *Roxb.*
3675 —— annulata, *Sm.*

3676 Quercus lamellosa, *Sm.*
3677 —— paucilamellosa, *Dc.*
3678 —— lanceæfolia, *Roxb.*
3679 —— oxyodon, *Miq.*
3680 —— xylocarpa, *Kz.*
3681 —— squamata, *Roxb.*
3682 Castanopsis Indica, *A. Dc.*
3683 —— castanicarpa, *Spach.*
3684 —— Hystrix, *Dc.*
3685 —— tribuloides, *Dc.*
3686 —— echinocarpa, *Dc.*

MYRICACEÆ.

3687 Myrica integrifolia, *Roxb.*
3688 —— sapida, *Wall.*

BETULACEÆ.

3689 Betula Bhoipaltra, *Wall.*
3690 —— acuminata, *Wall.*
3691 —— cylindrostachya, *Wall.*
3692 Alnus Nepalensis, *Wall.*

CORYLACEÆ.

3693 Carpinus viminea, *Wall.*
3694 —— faginea, *Ldl.*
3695 Corylus ferox, *Wall.*

JUGLANDACEÆ.

3696 Juglans regia, *L.*
3697 Engelhardtia spicata, *Bl.*

SALICINEÆ.

3698 Salix tetrasperma, *Roxb.*
3699 —— elegans, *Wall.*
3700 —— viminalis, *L.*
3701 —— eriophylla, *Anderss.*
3702 —— longipes, *Hf. and Th.*
3703 —— Lindleyana, *Wall.*
3704 —— calyculata, *Hf. and Th.*
3705 Salix secta, *Hf. and Th.*
3706 —— oreophila, *Hf. and Th.*
3707 —— Thomsoniana, *Anderss.*
3708 —— grisea, *Wall.*
3709 —— Smithiana, *Willd.*
3710 —— longiflora, *Wall.*
3711 —— myrtillacea, *Anderss.*
3712 —— serpyllum, *Anderss.*
3713 Populus ciliata, *Wall.*
3714 —— microcarpa, *Hf. and Th.*

ULMACEÆ.

3715 Ulmus integrifolia, *Roxb.*
3716 —— lancifolia, *Roxb*
3717 Celtis tetrandra, *Roxb.*
3718 —— glabra *Planch.*
3719 —— cinnamomea, *Ldl.*
3720 —— serotina, *Planch.*
3721 Trema Amboinensis, *Bl.*
3722 —— orientalis, *Bl.*
3723 Girronniera subæqualis, *Planch.*
3724 —— subserrata, *Kurz.*

URTICACEÆ.

3725 Cannabis sativa, *L.*
3726 Urtica parviflora, *Roxb.*
3727 Fleurya interrupta, *Gaud.*
3728 Laportea terminalis, *Wight.*
3729 —— crenulata, *Gaud.*
3730 Girardinia heterophylla, *Desv.*
3731 —— condensata, *Wedd.*
3732 Pilea peploides, *W. A.*
3733 —— smilacifolia, *Wedd.*
3734 —— anisophylla, *Wedd.*
3735 —— insolens, *Wedd.*

3736 Pilea ternifolia, *Wedd.*
3737 —— approximata, *Clarke.*
3738 —— oxyodon, *Wedd.*
3739 —— trinervia, *Wedd.*
3740 —— Hookeriana, *Wedd.*
3741 —— umbrosa, *Wedd.*
3742 —— bracteosa, *Wedd.*
3743 —— symmeria, *Wedd.*
3744 —— thalictrifolia, *Clarke.*
3745 —— hygrophila, *Wedd.*
3746 Lecanthus Wightii, *Wedd.*
3747 Pellionia Griffithiana, *Wedd.*
3748 —— ambigua, *Wedd.*
3749 Elatostemma ficoides, *Wedd.*
3750 —— sessile, *Forst.*
3751 —— platyphyllum, *Wedd.*
3752 —— rupestre, *Wedd.*
3753 —— integrifolium, *Wedd.*
3754 —— Sikkimense, *Clarke,*
3755 —— procridioides, *Wedd.*
3756 —— Hookerianum, *Wedd.*
3757 —— lineolatum, *Wedd.*
3758 —— subincisum, *Wedd.*
3759 —— dissectum, *Wedd.*
3760 —— cornutum, *Wedd.*
3761 —— obtusum, *Wedd.*
3762 —— papillosum, *Wedd.*
3763 —— Stracheyanum, *Wedd.*
3764 —— diversifolium, *Wedd.*
3765 —— pusillum, *Clarke.*
3766 —— Khasianum, *Clarke.*
3767 Procris lævigata, *Bl.*
3768 Bœhmeria Malabarica, *Wall.*
3769 —— comosa, *Wedd.*
3770 —— nivea, *Hook. and Arn.*
3771 —— rugulosa, *Wedd.*
3772 —— macrophylla, *Don.*
3773 —— platyphylla, *Don.*
3774 Bœhmeria Hamiltoniana, *Wedd.*
3775 —— polystachya, *Wedd.*
3776 —— Assamica, *Clarke.*
3777 Chamæbainia squamigera, *Wedd.*
3778 Pouzolzia Indica, *Gaud.*
3779 —— viminea, *Wedd.*
3780 —— ovalis, *Wedd.*
3781 Memorialis pentandra, *Wedd.*
3782 Hyrtanandra hirta, *Miq.*
3783 Sarcochlamys pulcherrima, *Gaud.*
3784 Oreocnide frutescens, *Bl.*
3785 Villebrunnea appendiculata, *Wedd.*
3786 Morocarpus velutinus, *Bl.*
3787 —— leucophylla, *Wedd.*
3788 Maoutia Puya, *Wedd.*
3789 Distemon Indicum, *Wedd.*
3790 Conocephalus Roxburghii, *Trec.*
3791 —— suaveolens, *Bl.*
3792 Artocarpus chaplasha, *Roxb.*
3793 —— lacoocha, *Roxb.*
3794 —— integrifolia, *L.*
3795 Cudranus Javanicus, *Trec.*
3796 —— fruticosus, *Trec.*
3797 Balanostreblus ilicifolius, *Kurz.*
3798 Pseudostreblus Indica, *Bur.*
3799 Streblus asper, *Lour.*
3800 Morus Indica, *L.*
3801 —— atropurpurea, *Royle.*
3802 —— lævigata, *Wall.*
3803 Ficus Bengalensis, *L.*
3804 —— tomentosa, *Roxb.*
3805 —— Mysurensis, *Roth.*

3806 Ficus annulata, *Bl.*
3807 —— laccifera, *Roxb.*
3808 —— Indica, *L.*
3809 —— obtusifolia, *Roxb.*
3810 —— ramea, *Wall.*
3811 —— retusa, *L.*
3812 —— elastica, *Nois.*
3813 —— comosa, *Roxb.*
3814 —— benjamina, *L.*
3815 —— rhododendrifolia, *Miq.*
3816 —— affinis, *Wall.*
3817 —— Thomsoni, *Miq.*
3818 —— fraterna, *Miq.*
3819 —— Tjila, *Roxb.*
3820 —— infectoria, *Roxb.*
3821 —— monticola, *Miq.*
3822 —— religiosa, *L.*
3823 —— Arnottiana, *Miq.*
3824 —— Rumphii, *Bl.*
3825 —— nervosa, *Heyne.*
3826 —— callosa, *Willd.*
3827 —— Fieldingii, *Miq.*
3828 —— gemella, *Wall.*
3829 —— nemoralis, *Wall.*
3830 —— clavata, *Wall.*
3831 —— parasitica, *Kœn.*
3832 —— Altimeraloo, *Roxb.*
3833 —— subulata, *Bl.*
3834 —— uniglandulosa, *Wall.*
3835 —— radicans, *Roxb.*
3836 —— caudata, *Wall.*
3837 —— pisifera, *Wall.*
3838 —— Silhetensis, *Miq.*
3839 —— scandens, *Roxb.*
3840 —— foveolata, *Wall.*
3841 —— erecta, *Thbg.*
3842 —— ramentacea, *Roxb.*
3843 —— Emodi, *Wall.*
3844 —— diversifolia, *Bl.*
3845 Ficus pyriformis, *Hook and Arn.*
3846 —— Millesii, *Walp.*
3847 —— pyrrhocarpa, *Kz.*
3848 —— lanceolata, *Buch.*
3849 —— Roxburghii, *Wall.*
3850 —— regia, *Miq.*
3851 —— cyrtophylla, *Miq.*
3852 —— hispida, *L. f.*
3853 —— dæmonum, *Roxb.*
3854 —— oligodon, *Miq.*
3855 —— fistulosa, *Newdl.*
3856 —— cunia, *Buch.*
3857 —— conglomerata, *Roxb.*
3858 —— prostrata, *Wall.*
3859 —— leucocarpa, *Miq.*
3860 —— glomerata, *Will.*
3861 —— Chittagonga, *Miq.*
3862 —— subpyriformis, *Miq.*
3863 —— scabrella, *Roxb.*
3864 —— heterophylla, *L. f.*
3865 —— asperior, *Miq.*
3866 —— virgata, *Roxb.*
3867 —— trilōba, *Ham.*

PODOSTEMMACEÆ.

3868 Dicræa Wallichii, *Tul.*
3869 —— pterophylla, *Wedd.*
3870 —— minor, *Wedd.*
3871 Hydrobryum Griffithii, *Tul.*
3872 Podostemon acuminatus, *Wedd.*

PIPERACEÆ.

3873 Houttuynia cordata, *Thbg.*
3874 Piper Griffithii, *Dc.*
3875 —— boehmeriæfolium, *Wall.*
3876 —— Khasianum, *Dc.*
3877 —— pedicellatum, *Dc.*

3878 Piper longum, *L.*
3879 —— sylvaticum, *Roxb.*
3880 —— aurantiacum, *Wall.*
3881 —— Nepalense, *Miq.*
3882 —— Betle, *L.*
3883 —— Hamiltonii, *Dc.*
3884 —— Sirium, *Dc.*
3885 —— nigrum, *L.*
3886 —— attenuatum, *Miq.*
3887 —— Zuccarinii, *Dc.*
3888 Chavica sphærostachya, *Miq.*
3889 —— petiolata, *Dc.*
3890 —— Thomsonii, *Dc.*
3891 —— pepuloides, *Miq.*
3892 Peperomia reflexa, *A. Dietr.*
3893 —— Heyneana, *Miq.*
3894 Chloranthus officinalis, *Bl.*
3895 —— inconspicuus, *Sw.*
3896 —— brachystachys, *Bl.*

GNETACEÆ.

3897 Ephedra fragilis, *Desf.*
3898 Gnetum edule, *Bl.*
3899 —— funiculare, *Bl.*
3900 —— Gnemon, *L.*

BALANOPHORACEÆ.

3901 Rhapalocnemis phalloides, *Jungh.*
3902 Balanophora dioica, *Wall.*
3903 —— polyandra, *Griff.*
3904 —— involucrata, *Hf. and Th.*

CYTINACEÆ.

3905 Sapria Himalayana, *Griff.*

CYCADEÆ.

3906 Cycas pectinata, *Griff.*
3907 Cyrus circinalis, *L.*
3908 —— Jenkinsii, *Griff.*

CASUARINÆ.

3909 Casuarina equisetifolia, *Forst.*

CONIFERÆ.

3910 Pinus Khasya, *Royle.*
3911 —— longifolia, *Roxb.*
3912 —— excelsa, *Don.*
3913 —— Griffithii, *Parl.*
3914 —— Smithiana, *Lamb.*
3915 —— Webbiana, *Wall.*
3916 —— Dumosa, *Don.*
3917 Biota orientalis, *Endl.*
3918 Cupressus funebris, *Endl.*
3919 —— torulosa, *Don.*
3920 Juniperus pseudosabina, *Fisch and Mey.*
3921 —— recurva, *Ham.*
3922 —— Chinensis, *L.*
3923 Taxus baccata, *L.*
3924 Ceptalotaxus, *Sp.*
3925 Podocarpus latifolia, *Wall.*
3926 —— neriifolia, *Don.*
3927 —— bracteata, *Pl.*
3928 —— macrophylla, *Don.*

PALMÆ.

3929 Areca gracilis, *Roxb.*
3930 —— triandra, *Roxb.*
3931 —— Catechu, *L.*
3932 Wallichia nana, *Mart.*
3933 —— caryotoides, *Roxb.*
3934 —— disticha, *T. And.*
3935 —— oblongifolia, *Griff.*
3936 Arenga saccharifera, *Lab.*
2937 Caryota urens, *L.*
3938 —— sobolifera, *Wall.*

3939 Calamus erectus, *Roxb.*
3940 —— schizospathus, *Griff.*
3941 —— longisetus, *Griff.*
3942 —— arborescens, *Griff.*
3943 —— acanthospathus, *Griff.*
3944 —— leptospadix, *Griff.*
3945 —— latifolius, *Roxb.*
3946 —— Mastersianus, *Griff.*
3947 —— Rotang, *Roxb.*
3948 —— Guruba, *Mart.*
3949 —— floribundus, *Griff.*
3950 —— tenuis, *Roxb.*
3951 —— macracanthus, *T. And.*
3952 —— gracilis, *Roxb.*
3953 —— fasciculatus, *Roxb.*
3954 —— inermis, *T. And.*
3955 —— flagellatus, *Griff.*
3956 —— montanus, *T. And.*
3957 —— Jenkinsianus, *Griff.*
3958 Plectocomia Himalayana, *Griff.*
3959 —— Assamica, *Griff.*
3960 Borassus flabelliformis, *L.*
3961 Corypha umbraculifera, *L.*
3962 —— Taliera, *Roxb.*
3963 Livistona Jenkinsii, *Griff.*
3964 Licuala peltata, *Roxb.*
3965 Chamaerhops Khasyana, *Griff.*
3966 Phœnix sylvestris, *Roxb.*
3967 —— paludosa, *Roxb.*
3968 —— acaulis, *Roxb.*
3969 —— rupicola, *T. And.*
3970 Cocos nucifera, *L.*
3971 Nipa fruticans, *Wormb.*

PANDANEÆ.

3972 Pandanus odoratissimus, *L. f.*
3973 Pandanus fœtidus, *Roxb.*
3974 —— furcatus, *Roxb.*
3975 —— lævis, *Roxb.*

TYPHACEÆ.

3976 Sparganium ramosum, *L.*
3977 Typha angustifolia, *L.*
3978 —— elephantina, *Roxb.*

AROIDEÆ.

3979 Arisæma echinatum, *Schott.*
3980 —— nepenthoides, *Schott.*
3981 —— erubescens, *Mart.*
3982 —— Jacquemontii, *Be.*
3983 —— utile, *Hf. and Th.*
3984 —— Griffithii, *Schott.*
3985 —— speciosum, *Mart.*
3986 —— curvatum, *Kth.*
3987 —— gracile, *Kth.*
3988 Cryptocoryne ciliata, *Fisch.*
3989 —— retrospiralis, *Kth.*
3990 Sauromatum guttatum, *Schott.*
3991 Typhonium Roxburghii, *Schott.*
3992 —— flagelliforme, *Wight.*
3993 Conophallus bublifer, *Schott.*
3994 Pythonium Wallichianum, *Schott.*
3995 Amorphophallus campanulatus, *Bl.*
3996 Ariopsis peltata, *Dalz.*
3997 Remusatia vivipara, *Schott.*
3998 Gonatanthus sarmentosus, *Klotsch.*
3999 Colocasia virosa, *Kth.*
4000 —— antiquorum, *Schott.*
4001 —— Indica, *Schott.*

4002 Colocasia commutata, *Schott.*
4003 —— fornicata, *Schott.*
4004 —— cucullata, *Schott.*
4005 Aglaonema simplex, *Bl.*
4006 —— Hookeriana, *Schott.*
4007 Homalonema erubescens, *Schott.*
4008 Scindapsus calophyllus, *Schott.*
4009 —— officinalis, *Schott.*
4010 —— peepla, *Schott.*
4011 —— glaucus, *Schott.*
4012 —— pertusus, *Schott.*
4013 Lasia heterophylla, *Schott.*
4014 —— aculeata, *Lour.*
4015 Pothos scandens, *L.*
4016 Acorus Calamus, *L.*
4017 Pistia stratiotes, *L.*

LEMNACEÆ.

4018 Lemna trisulca, *L.*
4019 —— paucicostata, *Hegelm.*
4020 —— polyrrhiza, *L.*
4021 —— oligorhiza, *Kz.*
4022 Wolffia arrhiza, *Wimm.*

HYDROCHARIDEÆ.

4023 Hydrilla verticillata, *Casp.*
4024 —— dentata, *Casp.*
4025 Nechamandra alternifolia, *Planch.*
4026 Vallisneria spiralis, *L.*
4027 Hydrotrophus echinospermus, *Clarke.*
4028 Blyxa octandra, *L.*
4029 Ottelia alismoides, *Roch.*
4030 Hydrocharis cellulosa, *Ham.*

NAJADEÆ.

4031 Ruppia maritima, *L.*
4032 Potamogeton pectinatus, *L.*
4033 —— hybridus, *Mich.*
4034 —— crispus, *L.*
4035 —— natans, *L.*
4036 Aponogeton monostachyus, *Roxb.*
4037 —— crispus, *Thbg.*
4038 Najas minor, *L.*
4039 Zannichellia palustris, *L.*

SCITAMINEÆ.

4040 Globba marantoides, *Roxb.*
4041 —— orixensis, *Roxb.*
4042 —— racemosa, *Sm.*
4043 —— Careyana, *Roxb.*
4044 —— multiflora, *Wall.*
4045 —— velutina, *Wall.*
4046 —— expansa, *Wall.*
4047 —— Andersoni, *Clarke.*
4048 Zingiber Zerumbet, *Rosc.*
4049 —— capitatum, *Roxb.*
4050 —— Cassumunar, *Roxb.*
4051 —— squarrosum, *Roxb.*
4052 —— panduratum, *Roxb.*
4053 —— officinale, *Rosc.*
4054 —— rubens, *Roxb.*
4055 —— elatum, *Roxb.*
4056 Curcuma Zerumbet, *L.*
4057 —— Zedoaria, *Roxb.*
4058 —— leucorhiza, *Roxb.*
4059 —— longa, *L.*
4060 —— cæsia, *Roxb.*
4061 —— ferruginea, *Roxb.*
4062 —— æruginosa, *Roxb.*
4063 —— rubescens, *Roxb.*
4064 —— amada, *Roxb.*
4065 Kaempferia Galanga, *L.*
4066 —— secunda, *Wall.*

4067 Kaempferia angustifolia, *Roxb.*
4068 Roscoea elata, *Sm.*
4069 —— spicata, *Sm.*
4070 —— gracilis, *Sm.*
4071 —— purpurea, *Sm.*
4072 Amomum aculeatum, *Roxb.*
4073 —— linguiforme, *Roxb.*
4074 —— sericeum, *Rosc.*
4075 —— aromaticum, *Rosc.*
4076 —— dealbatum, *Roxb.*
4077 Hedychium coronarium, *L.*
4078 —— flavum, *Roxb.*
4079 —— ellipticum, *Hance.*
4080 —— angustifolium, *Roxb.*
4081 —— coccineum, *Ham.*
4082 —— elatum, *R. Br.*
4083 —— viridiflorum, *Clarke.*
4084 —— thyrsiforme, *Ham.*
4085 —— spicatum, *Sm.*
4086 —— villosum, *Wall.*
4087 —— gracile, *Roxb.*
4088 —— densiflorum, *Wall.*
4089 —— Griffithianum, *Wall.*
4090 —— Gardnerianum, *Wall.*
4091 Alpinia nutans, *L.*
4092 —— Allughas, *L.*
4093 —— Galanga, *Roxb.*
4094 —— Hamiltoniana, *Wall.*
4095 —— porrecta, *Wall.*
4096 Monolophus linearis, *Wall.*
4097 —— secundus, *Wall.*
4098 Hitchenia glauca, *Wall.*
4099 Costus speciosus, *Sm.*

MARANTACEÆ.

4100 Maranta dichotoma, *Wall.*
4101 Phrynium imbricatum, *Roxb.*
4102 —— parviflorum, *Roxb.*
4103 Phrynium macrostachyum, *Wall.*
4104 —— capitatum, *Wall.*
4105 Canna Indica, *L.*

MUSACEÆ.

4106 Ravenala Madagascariensis, *Raf.*
4107 Musa sapientum, *L.*
4108 —— ornata, *Roxb.*
4109 —— rubra, *Wall.*
4110 —— dasycarpa, *Kz.*
4111 —— sanguinea, *Hf.*
4112 —— Sikkimensis, *Kz.*

BROMELIACEÆ.

4113 Ananassa sativa, *Ldl.*

ORCHIDEÆ.

4114 Pholidota imbricata, *Ldl.*
4115 —— rubra, *Ldl.*
4116 —— recurva, *Ldl.*
4117 —— articulata, *Ldl.*
4118 —— calceata, *Rchb. f.*
4119 —— convallariæ, *Rchb. f.*
4120 Otochilus alba, *Ldl.*
4121 —— fusca, *Ldl.*
4122 —— porrecta, *Ldl.*
4123 Tipularia Josephi, *Rchb. f.*
4124 Epipactis latifolia, *Sw.*
4125 —— intrusa, *Ldl.*
4126 Cephalanthera ensifolia, *L. Rich.*
4127 Listera pinetorum *Ldl.*
4128 —— tenuis, *Ldl.*
4129 —— micrantha, *Ldl.*
4130 Epipogium nutans, *Ldl.*
4131 Anoectochilus lanceolatus, *Ldl.*
4132 —— luteus, *Ldl.*

4133 Anœctochilus grandiflorus, *Ldl.*
4134 —— brevilabris, *Ldl.*
4135 —— crispus, *Ldl.*
4136 Physurus hirsutus, *Ldl.*
4137 Rhomboda longifolia, *Ldl.*
4138 Rhamphidia ovalifolia, *Ldl.*
4139 —— rubens, *Ldl.*
4140 Goodyera secundiflora, *Griff.*
4141 —— hispida, *Ldl.*
4142 —— repens, *R. Br.*
4143 —— recurva, *Ldl.*
4144 —— procera, *Hook.*
4145 Georchis cordata, *Ldl.*
4146 —— vittata, *Ldl.*
4147 Aetheria mollis, *Ldl.*
4148 Dossinia marmorata, *Morz.*
4149 —— lanceolata, *Ldl.*
4150 Zeuxine sulcata, *Ldl.*
4151 —— membranacea, *Ldl.*
4152 —— Tripleura, *Ldl.*
4153 Monochilus nervosus, *Ldl.*
4154 —— flavus, *Ldl.*
4155 —— goodyeroides, *Ldl.*
4156 —— galeatus, *Ldl.*
4157 Cheirostylis flabellata, *Wight.*
4158 —— pusilla, *Ldl.*
4159 —— Griffithii, *Ldl.*
4160 Dendrobium pauciflorum, *Rchb. f.*
4161 —— anceps, *Roxb.*
4162 —— cuspidatum, *Wall.*
4163 —— Macræi, *Ldl.*
4164 —— Rabani, *Ldl.*
4165 —— densiflorum, *Wall.*
4166 —— Hookerianum, *Ldl.*
4167 —— chrysanthum, *Wall.*
4168 —— ochreatum, *Ldl.*
4169 Dendrobium moschatum, *Wall.*
4170 —— fuscatum, *Ldl.*
4171 —— Pseudaclinia, *Ldl.*
4172 —— pulchellum, *Ldl.*
4173 —— Pierardi, *Roxb.*
4174 —— primulinum, *Ldl.*
4175 —— transparens, *Wall.*
4176 —— amœnum, *Wall.*
4177 —— nobile, *Ldl.*
4178 —— Lindleyanum, *Griff.*
4179 —— stupposum, *Ldl.*
4180 —— aqueum, *Ldl.*
4181 —— spathaceum, *Ldl.*
4182 —— formosum, *Roxb.*
4183 —— longicornu, *Ldl.*
4184 —— porphyrochilum, *Ldl.*
4185 —— eriæflorum, *Griff.*
4186 —— denudans, *Don.*
4187 —— uniflorum, *Griff.*
4188 —— heterocarpum, *Ldl.*
4189 —— Falconeri, *Hook.*
4190 Cleisostoma Mannii, *Rchb. f.*
4191 —— loratum, *Rchb. f.*
4192 Phalaenopsis Mannii, *Rchb. f.*
4193 Cryptochilus sanguineus, *Wall.*
4194 —— lutea, *Ldl.*
4195 Acanthophippium Sylhetense, *Ldl.*
4196 —— gracile, *Wall.*
4197 Spathoglottis ixioides, *Ldl.*
4198 —— pubescens, *Ldl.*
4199 —— parvifolia, *Ldl.*
4200 Arundina bambusifolia, *Ldl.*
4201 —— affinis, *Griff.*
4202 —— speciosa, *Bl.*

4203 Nephelaphyllum cordifolium, *Ldl.*
4204 Eulophia bracteosa, *Ldl.*
4205 —— graminea, *Ldl.*
4206 —— densiflora, *Ldl.*
4207 —— ramentacea, *Ldl.*
4208 —— hastata, *Ldl.*
4209 —— stenopetala, *Ldl.*
4210 —— virens, *R. Br.*
4211 Oreorchis foliosa, *Ldl.*
4212 Cymbiduim aloifolium, *Sw.*
4213 —— cyperifolium, *Wall.*
4214 —— cochleare, *Ldl.*
4215 —— eburneum, *Ldl.*
4216 —— affine, *Griff.*
4217 —— elegans, *Ldl.*
4218 —— longifolium, *Don.*
4219 —— giganteum, *Wall.*
4220 —— micromeson, *Ldl.*
4221 —— chloranthum, *Ldl.*
4222 —— Sinense, *Willd.*
4223 —— erythraeum, *Ldl.*
4224 —— lancifolium, *Hook.*
4225 —— Hookerianum, *Rchb. f.*
4226 —— Mannii, *Rchb. f.*
4227 Cremastra Wallichiana, *Ldl.*
4228 Cyrtopera bicarinata, *Ldl.*
4229 —— candida, *Ldl.*
4230 —— sanguinea, *Ldl.*
4231 —— nuda, *Rchb. f.*
4232 —— Mannii, *Rchb. f.*
4233 Acampe papillosa, *Ldl.*
4334 —— cephalotes, *Ldl.*
4235 —— dentata, *Ldl.*
4236 —— Griffithii, *Rchb. f.*
4237 Acrochæne punctata, *Ldl.*
4238 Saccolabium guttatum, *Ldl.*
4239 —— calceolare, *Ldl.*
4240 —— obliquum, *Ldl.*
4241 —— intermedium, *Griff.*
4242 Saccolabium acutifolium, *Ldl.*
4243 —— micranthum, *Ldl.*
4244 —— gemmatum, *Ldl.*
4245 —— ampullaceum, *Ldl.*
4246 —— pallens, *Cathc.*
4247 —— Wightianum, *Ldl.*
4248 —— distichum, *Ldl.*
4249 Podochilus cultratus, *Ldl.*
4250 —— microphyllus, *Ldl.*
4251 Camarotis purpurea, *Ldl.*
4252 —— pallida, *Ldl.*
4253 Stereochilus hirtus, *Ldl.*
4254 Sarcanthus pallidus, *Ldl.*
4255 Cottonia Championi, *Ldl.*
4256 Uncifera obtusifolia, *Ldl.*
4257 —— acuminata, *Ldl.*
4258 Aerides cylindricum, *Ldl.*
4259 —— tæniale, *Ldl.*
4260 —— affine, *Wall.*
4261 —— odoratum, *Lour.*
4262 —— difforme, *Wall.*
4263 —— Hystrix, *Ldl.*
4264 Vanda undulata, *Ldl.*
4265 —— Roxburghii, *R. Br.*
4266 —— bicolor, *Griff.*
4267 —— teres, *Ldl.*
4268 —— Catcarthi, *Ldl.*
4269 —— cœrulea, *Griff.*
4270 —— cristata, *Ldl.*
4271 —— Griffithii, *Ldl.*
4272 —— alpina, *Ldl.*
4273 —— Stangeana, *Rchb. f.*
4274 Chiloschista usneoides, *Ldl.*
4275 Aceras angustifolia, *Ldl.*
4276 Satyrium Nepalense, *Don.*
4277 —— ciliatum, *Ldl.*
4278 Diplomeris pulchella, *Don.*
4279 Pogonia carinata, *Ldl.*
4280 —— plicata, *Ldl.*

4281 Pogoia Juliana, *Wall.*
4282 —— Scottii, *Rchb. f.*
4283 Eria microchilos, *Dalz.*
4284 —— pusilla, *Ldl.*
4285 —— flava, *Ldl.*
4286 —— pannea, *Ldl.*
4287 —— carinata, *Gibs.*
4288 —— scabrilinguis, *Ldl.*
4289 —— vittata, *Ldl.*
4290 —— discolor, *Ldl.*
4291 —— stricta, *Ldl.*
4292 —— suavis, *Ldl.*
4293 —— convallarioides, *Ldl.*
4294 —— alba, *Ldl.*
4295 —— pubescens, *Wight.*
4296 —— graminifolia, *Ldl.*
4297 —— sphærochila, *Ldl.*
4298 —— paniculata, *Ldl.*
4299 —— ferruginea, *Ldl.*
4300 —— pauciflora, *Wight.*
4301 —— Khasiana, *Ldl.*
4302 —— clavicaulis, *Ldl.*
4303 —— bambusifolia, *Ldl.*
4304 —— angulata, *Rchb. f.*
4305 Œceoclades flexuosa, *Ldl.*
4306 —— pusilla, *Ldl.*
4307 Phreatia elegans, *Ldl.*
4308 Thelasis pygmæa, *Ldl.*
4309 Oberonia iridifolia, *Ldl.*
4310 —— Brunoniana, *Wight.*
4311 —— Lindleyana, *Wight.*
4312 —— verticillata, *Wight.*
4313 —— pyrulifera, *Wight.*
4314 —— bicornis, *Ldl.*
4315 —— demissa, *Ldl.*
4316 —— Jenkinsiana, *Griff.*
4317 —— ensiformis, *Ldl.*
4318 —— Sikkimensis, *Ldl.*
4319 —— myriantha, *Ldl.*
4320 —— Wightiana, *Ldl.*
4321 Oberonia angustifolia, *Ldl.*
4322 —— caulescens, *Ldl.*
4323 —— obcordata, *Ldl.*
4324 —— trilobata, *Griff.*
4325 —— acaulis, *Griff.*
4326 Microstylis Wallichii, *Ldl.*
4327 —— biaurita, *Ldl.*
4328 —— biloba, *Ldl.*
4329 Empusa paradoxa, *Ldl.*
4330 Dienia congesta, *Ldl.*
4331 —— muscifera, *Ldl.*
4332 Liparis longipes, *Ldl.*
4333 —— stachyurus, *Rchb. f.*
4334 —— luteola, *Ldl.*
4335 —— bituberculata, *Ldl.*
4336 —— Nepalensis, *Ldl.*
4337 —— mannii, *Rchb. f.*
4338 —— vestita, *Rchb. f.*
4339 Platystylis decurrens, *Ldl.*
4340 Microstylis Wallichii, *Ldl.*
4341 Cœlogyne Gardneriana, *Ldl.*
4342 —— ochracea, *Ldl.*
4343 —— nitida, *Ldl.*
4344 —— corrugata, *Wight.*
4345 —— corymbosa, *Ldl.*
4346 —— brevifolia, *Ldl.*
4347 —— ocellata, *Ldl.*
4348 —— cristata, *Ldl.*
4349 —— barbata, *Griff.*
4350 —— elata, *Ldl.*
4351 —— prolifera, *Ldl.*
4352 —— flavida, *Hf.*
4353 —— longipes, *Ldl.*
4354 —— fuscescens, *Ldl.*
4355 —— fimbriata, *Ldl.*
4356 —— fuliginosa, *Ldl.*
4357 —— Hookeriana, *Ldl.*
4358 —— diphylla, *Ldl.*
4359 —— maculata, *Ldl.*

4360 Cœlogyne humilis, *Ldl.*
4361 —— praecox, *Ldl.*
4362 —— lagenaria, *Ldl.*
4363 —— Huettneriana, *Rchb. f.*
4364 Mesoclastes brachystachys, *Ldl.*
4365 Bolbophyllum hirtum, *Ldl.*
4366 —— reptans, *Ldl.*
4367 —— umbellatum, *Ldl.*
4368 —— odoratissimum, *Ldl.*
4369 —— Careyanum, *Sprg.*
4370 —— caudatum, *Ldl.*
4371 —— radiatum, *Ldl.*
4372 —— Mannii, *Rchb. f.*
4373 —— muscicolum, *Rchb. f.*
4374 Trias ovata, *Ldl.*
4375 —— oblonga, *Ldl.*
4376 Phajus Wallichii, *Ldl.*
4377 —— veratrifolius, *Ldl.*
4378 —— albus, *Ldl.*
4379 Cytheris cordifolia, *Ldl.*
4380 Ania latifolia, *Ldl.*
4381 Apaturia senilis, *Ldl.*
4382 —— Smithiana, *Ldl.*
4383 Geodorum dilatatum, *R. Br.*
4384 —— rariflorum, *Ldl.*
4385 —— candidum, *Wall.*
4386 Sunipia scariosa, *Ldl.*
4387 Calanthe densiflora, *Ldl.*
4388 —— Masuca, *Ldl.*
4389 —— clavata, *Ldl.*
4390 —— uncata, *Lindl.*
4391 —— gracilis, *Ldl.*
4392 —— angusta, *Ldl.*
4393 —— puberula, *Ldl.*
4394 —— herbacea, *Ldl.*
4395 —— brevicornu. *Ldl.*
4396 —— chloroleuca, *Ldl.*
4397 Calanthe fulgens, *Ldl.*
4398 —— odora, *Griff.*
4399 —— biloba, *Ldl.*
4400 —— galeata, *Ldl.*
4401 —— vaginata, *Ldl.*
4402 —— alismæfolia, *Ldl.*
4403 —— Griffithii, *Ldl.*
4404 —— plantaginea, *Ldl.*
4405 Sarcopodium affine, *Ldl.*
4406 —— Griffithii, *Ldl.*
4407 —— leopardinum, *Ldl.*
4408 —— striatum, *Ldl.*
4409 —— fuscescens, *Ldl.*
4410 —— rotundatum, *Ldl.*
4411 —— amplum, *Ldl.*
4412 —— uniflorum, *Ldl.*
4413 Conchidium pusillum, *Griff.*
4414 Jone cirrhata, *Ldl.*
4415 —— virens, *Ldl.*
4416 —— fusco-purpurea, *Ldl.*
4417 —— paleacea, *Ldl.*
4418 —— Khasiana, *Ldl.*
4419 —— bicolor, *Ldl.*
4420 —— candida, *Ldl.*
4421 Limatodes gracilis, *Ldl.*
4422 —— Mishmiensis, *Ldl.*
4423 Luisia volucris, *Ldl.*
4424 —— tenuifolia, *Bl.*
4425 —— trichorrhiza, *Bl.*
4426 —— brachystachys, *Bl.*
4427 Panisea reflexa, *Ldl.*
4428 —— uniflora, *Ldl.*
4429 Gymnadenia spatulata, *Ldl.*
4430 —— Chusua, *Ldl.*
4431 Platanthera orchidis, *Ldl.*
4432 —— clavigera, *Ldl.*
4433 —— Susannæ, *Ldl.*
4434 —— Championi, *Ldl.*
4435 —— candida, *Ldl.*

4436 Platanthera tenuis, *Ldl.*
4437 —— constricta, *Wall.*
4438 Didymoplexis pallens, *Griff.*
4439 Anthogonium gracile, *Wall.*
4440 Cyrtosia Lindleyana, *Hf. and Th.*
4441 Listera pinetorum, *Ldl.*
4442 —— tenuis, *Ldl.*
4443 Spiranthes plantaginea, *Ldl.*
4444 —— australis, *R. Br.*
4445 Habenaria pectinata, *Ldl.*
4446 —— marginata, *Ldl.*
4447 —— graminea, *Ldl.*
4448 —— rostrata, *Ldl.*
4449 —— commelinifolia, *Ldl.*
4450 —— tenuis, *Griff.*
4451 Bonatea Bengalensis, *Griff.*
4452 Peristylus goodyeroides, *Ldl.*
4453 —— *oxysepalus*, *Ldl.*
4454 Herminium congestum, *Ldl.*
4455 —— grandiflorum, *Ldl.*
4456 —— Josephi, *Rchb. f.*
4457 Tropidia curculigoides, *Ldl.*
4458 Herpysma longicaulis, *Ldl.*
4459 Cypripedium venustum, *Bl.*
4460 —— insigne, *Ldl.*
4461 Corymbis macrostachya, *Bl.*
4462 Dossinia marmorata, *Ldl.*

APOSTASIACEÆ.

4463 Apostasia Wallichii, *Ldl.*

BURMANNIACEÆ.

4464 Burmannia juncea, *R. Br.*
4465 —— distachya, *L.*
4466 Burmannia Nepalensis, *Wall.*
4467 —— cœlestis, *Don.*

TACCACEÆ.

4468 Tacca pinnatifida, *L.*
4469 —— lævis, *Roxb.*

IRIDEÆ.

4470 Iris sulcata, *Wall.*
4471 —— decora, *Wall.*
4472 —— Nepalensis, *Wall.*
4473 Pardanthus Sinensis, *Ker.*

AMARYLLIDEÆ.

4474 Crinum toxicarium, *Roxb.*
4475 —— amabile, *Roxb.*
4476 —— Asiaticum, *L.*
4477 —— defixum, *Ker.*
4478 —— pratense, *Herb.*
4479 —— ornatum, *Herb.*
4480 Pancratium Zeylanicum, *L.*
4481 —— biflorum, *Roxb.*
4482 —— triflorum, *Roxb.*
4483 Molineria gracilis, *Kz.*
4484 —— capitellata, *Herb.*
4485 Hypoxis orchioides, *Kz.*
4486 —— aurea, *Lour.*
4487 Furcroya Cantula, *Haw.*

DIOSCOREÆ.

4488 Dioscorea pulchella, *Roxb.*
4489 —— fasciculata, *Roxb.*
4490 —— dæmonum, *Roxb.*
4491 —— crispata, *Roxb.*
4492 —— glabra, *Roxb.*
4493 —— anguina, *Roxb.*
4494 —— laurifolia, *Wall.*
4495 —— nummularia, *Lamk.*
4496 —— pentaphylla, *L.*

4497 Dioscorea spinosa, *Roxb.*
4498 —— hirsuta, *Wall.*
4499 —— triphylla, *L.*
4500 —— sativa, *L.*
4501 —— bulbifera, *L.*
4502 —— globosa, *Roxb.*
4503 —— alata, *L.*
4504 —— purpurea, *Roxb.*
4505 —— rubella, *Roxb.*
4506 —— aculeata, *L.*

LILIACEÆ.

4507 Iphigenia Indica, *Kth.*
4508 Lloydia serotina, *Rchb.*
4509 Fritillaria cirrhosa, *Don.*
4510 —— Gardneriana, *Wall.*
4511 —— Hookeri, *Bak.*
4512 Lilium giganteum, *Wall.*
4513 Gloriosa superba, *L.*
4514 Hemerocallis fulva, *L.*
4515 SansevieraZeylanica, *Willd.*
4516 Muscari Bootanense, *Griff.*
4517 Allium Wallichii, *Kth.*
4518 —— Porrum, *L.*
4519 —— Cepa, *L.*
4520 —— sativum, *L.*
4521 —— ascalonicum, *L.*
4522 —— Victorialis, *L.*
4523 —— odorum, *L.*
4424 —— Sikkimense, *Bak.*
4525 —— macranthum, *Bak.*
4526 —— exsertum, *Bak.*
4527 Urginea Indica, *Kth.*
4528 Asphodelus clavatus, *Roxb.*
4529 —— fistulosus, *L.*
4530 Chlorophytum undulatum, *Wall.*
4531 Phalangium tuberosum, *Roxb.*
4532 Dianella ensifolia, *Red.*
4533 Asparagus acerosus, *Roxb.*
4534 —— racemosus, *Willd.*
4535 —— filicinus, *Ham.*
4536 —— subulatus, *Steud.*
4537 —— curillus, *Roxb.*
4538 —— officinalis, *L.*
4539 —— Nepalensis, *Bak.*
4540 Dracæna angustifolia, *Roxb.*
4541 —— ensifolia, *Wall.*
4542 —— Griffithii, *Reg.*
4543 —— elliptica, *Thbg.*
4544 —— atropurpurea, *Roxb.*
4545 —— terniflora, *Roxb.*
4546 —— spicata, *Roxb.*
4547 Cordyline terminalis, *Kth.*
4548 Polygonatum oppositifolium, *Royle.*
4549 —— punctatum, *Royle.*
4550 —— Sibiricum, *Red.*
4551 —— verticillatum, *All.*
4552 —— brevistylum, *Bak.*
4553 —— nervulosum, *Bak.*
4554 —— Hookeri, *Bak.*
4555 —— Griffithii, *Bak.*
4556 —— Cathcartii, *Bak.*
4557 Theropogon pallidus, *Maxim.*
4558 Clintonia alpina, *Kth.*
4559 Tovaria oleracea, *Bak.*
4560 —— purpurea, *Bak.*
4561 —— oligophylla, *Bak.*
4562 —— fusca, *Bak.*
4563 Aspidistra lurida, *Gawl.*
4564 Medora divaricata, *Kth.*
4565 Tupistra squalida, *Gaidl.*
4566 Campylandra aurantiaca, *Bak.*
4567 Gonioscyphe cucomoides, *Bak.*

4568 Fluggea Wallichiana, *Schult.*
4569 —— intermedia, *Schult.*
4570 —— dracænoides, *Bak.*
4571 Peliosanthes Teta, *Andr.*
4572 —— macrophylla, *Wall.*
4573 Smilax lanceifolia, *Roxb.*
4574 —— maculata, *Roxb.*
4575 —— elegans, *Woll.*
4576 —— macrophylla, *Roxb.*
4577 —— Roxburghiana, *Wall.*
4578 —— China, *L.*
4579 —— ovalifolia, *Roxb.*
4580 —— ferox, *Wall.*
4581 —— rigida, *Wall.*
4582 —— oxyphylla, *Wall.*
4583 —— prolifera, *Roxb.*
4584 —— glabra, *Roxb.*
4585 Stemona tuberosa, *Lour.*
4586 Tofieldia Nepalensis, *Wall.*
4587 Tricyrtis elegans, *Wall.*
4588 Paris polyphylla, *Sm.*
4589 Trillidium Govanianum, *Kth.*
4590 Disporum Wallichii, *Don.*
4591 —— Pitsutum, *Don.*
3592 —— calcaratum, *Don.*
4593 —— Hamiltonianum, *Don.*
4594 Streptopus simplex, *Don.*

BUTOMACEÆ.

4595 Butomus lanceolatus, *Roxb.*

ALISMACEÆ.

4596 Triglochin maritimum, *L.*
4597 Alisma Plantago, *L.*
4598 —— reniforme, *Don.*
4599 Sagittaria cordifolia, *Roxb.*
4600 —— sagittifolia, *L.*
4601 —— obtusifolia, *L.*

PONTEDERACEÆ.

4602 Monochoria vaginalis, *Prsl.*
4603 —— plantaginea, *Kth.*
4604 —— sagittata, *Roxb.*
4605 —— hastata, *Prsl.*

COMMELYNACEÆ.

4606 Commelyna communis, *Kth.*
4607 —— salicifolia, *Kth.*
4608 —— appendiculata, *Clarke.*
4609 —— Bengalensis, *Kth.*
4610 —— Kurzii, *Clarke.*
4611 —— Rajmehalensis, *Clarke.*
4612 —— obliqua, *Don.*
4613 —— Sikkimensis, *Clarke.*
4614 —— Simsoni, *Clarke.*
4615 —— erecta, *L.*
4616 Aneilema scapiflorum, *Wight.*
4617 —— lineolatum, *Kth.*
4618 —— herbaceum, *Kth.*
4619 —— triquetrum, *Wall.*
4620 —— nanum, *Kth.*
4621 —— nudiflorum, *Kth.*
4622 —— ensifolium, *Wight.*
4623 —— vaginatum, *Kth.*
4624 —— protensum, *Wall.*
4625 Acclisia Indica, *Wight.*
4626 —— subumbellata, *Clarke.*
4627 —— Thomsoni, *Clarke.*
4628 Floscopa paniculata, *Lour.*
4629 Cyanotis axillaris, *Kth.*
4630 —— cristata, *Kth.*
4631 —— racemosa, *Heyne.*
4632 —— barbata, *Kth.*
4633 —— nodiflora, *Kth.*
4634 —— nobilis, *Hassk.*
4635 Streptolirion volubile, *Edg*
4636 Forrestia Hookeri, *Hassk.*

4637 Forrestia glabrata, *Hassk.*
4638 Dichœspermum Blumei, *Hassk.*
4639 —— repens, *Wight.*
4640 Pollia Aclisia, *Clarke.*
4641 Flagellaria Indica, *L.*

XYRIDACEÆ.

4642 Xyris pauciflora, *Willd.*
4643 —— Indica, *L.*
4644 —— Wallichii, *Kth.*
4645 —— schœnoides, *Mart.*
4646 —— robusta, *Mart.*

JUNCACEÆ.

4647 Luzula Forsteri, *Dc.*
4648 —— campestris, *L.*
4649 Juncus glaucus, *Ehrh.*
4650 —— Leschenaultii, *J. Gay.*
4651 —— castaneus, *L.*
4652 —— bufonius, *L.*
4653 —— concinnus, *Dene.*
4654 —— effusus, *L.*
4655 —— leucanthus, *Don.*
4656 —— membranaceus, *Royle.*
4657 —— sphacelatus, *Dene.*
4658 —— triglumis, *L.*
4659 —— minimus, *Buchenau.*
4660 —— ochraceus, *Buchenau.*
4661 —— grisebachii, *Buchenau.*

RESTIACEÆ.

4662 Eriocaulon Brownianum, *Mart.*
4663 —— luzulæfolium, *Mart.*
4664 —— cristatum, *Mart.*
4665 —— setaceum, *L.*
4666 —— quinquangulare, *L.*
4667 —— xeranthe num, *Mart.*
4668 Eriocaulon achiton, *Koern.*
4669 —— alpestre, *Hf. and Th.*
4670 —— sexangulare, *L.*
4671 —— gregatum, *Koern.*
4672 —— truncatum, *Ham.*
4673 —— oryzetorum, *Mart.*
4674 —— trilobum, *Ham.*

CYPERACEÆ.

4675 Carex Thomsoni, *Boott.*
4676 —— nubigena, *Don.*
4677 —— foliosa, *Don.*
4678 —— curvata, *Boott.*
4679 —— setigera, *Don.*
4680 —— spiculata, *Boott.*
4681 —— composita, *Boott.*
4682 —— nobilis, *Boott.*
4683 —— polycephala, *Boott.*
4684 —— pulchra, *Boott.*
4685 —— insignis, *Boott.*
4686 —— decora, *Boott.*
4687 —— Daltoni, *Boott.*
4688 —— Wallichiana, *Presc.*
4689 —— munda, *Boott.*
4690 —— fragilis, *Boott.*
4691 —— uncinioides, *Boott.*
4692 —— notha, *Kth.*
4693 —— Jackiana, *Boott.*
4694 —— Moorcroftii, *Falc.*
4695 —— Wightiana, *Ne.*
4696 —— rara, *Boott.*
4697 —— capillacea, *Boott.*
4698 —— fusiformis, *NE.*
4699 —— finitima, *Boott.*
4700 —— ligulata, *NE.*
4701 —— linearis, *Boott.*
4702 —— speciosa, *Kth.*
4703 —— radicalis, *Boott.*
4704 —— parva, *NE.*
4705 —— olivacea, *Boott.*

4706 Carex excurva, *Boott.*
4707 —— gracilis, *R. Br.*
4708 —— teinogyna, *Boott.*
4709 —— teres, *Boott.*
4710 —— phacota, *Sprg.*
4711 —— tumida, *Boott.*
4712 —— læta, *Boott.*
4713 —— psychrophila, *NE.*
4714 —— obscura, *NE.*
4715 —— ustulata, *Whlbg.*
4716 —— hæmatostoma, *NE.*
4717 —— cruenta, *NE.*
4718 —— fuliginosa, *Strbg. and Hoppe.*
4719 —— desponsa, *Boott.*
4720 —— Myosurus, *NE.*
4721 —— baccans, *NE.*
4722 —— Bengalensis, *Roxb.*
4723 —— condensata, *NE.*
4724 —— Japonica, *Thbg.*
4725 —— alopecuroides, *Don.*
4726 —— fucata, *Boott.*
4727 —— pruinosa, *Boott.*
4728 —— setosa, *Boott.*
4729 —— Nepalensis, *Spreng.*
4730 —— Esenbeckii, *Kth.*
4731 —— cæspititia, *NE.*
4732 —— cernua, *Boott.*
4733 —— scitula, *Boott.*
4734 —— longipes, *Don.*
4735 —— remota, *L.*
4736 —— peduncularis, *Wall.*
4737 —— pulchra, *Boott.*
4738 —— atrata, *L.*
4739 —— lachnosperma, *Wall.*
4740 —— pellucida, *Turcz.*
4741 —— Doniana, *Spreng.*
4742 —— instabilis, *Boott.*
4743 —— gracilenta, *Boott.*
4744 —— ampullacea, *Whlbg.*
4745 Carex curvata, *Boott.*
4746 —— Lehmanni, *Dry.*
4747 —— spiculata, *Boott.*
4748 —— setata, *Boott.*
4749 —— diffusa, *Boott.*
4750 —— longiaristata, *Boott.*
4751 —— stramentitia, *Boott.*
4752 —— vacua, *Boott.*
4753 —— vesiculosa, *Boott.*
4754 —— filicina, *N. E.*
4755 —— cruciata, *Boott.*
4756 —— Indica, *L.*
4757 Scleria uliginosa, *Hohen.*
4758 —— oryzoides, *Prsl.*
4759 —— pergracilis, *NE.*
4760 —— corymbifera, *Boeck.*
4761 —— ciliaris, *NE.*
4762 —— tessellata, *Willd.*
4763 —— lithosperma, *Willd.*
4764 —— Steudeliana, *Mig.*
4765 —— Thomsoniana, *Boek.*
4766 —— alta, *Boeck.*
4767 —— elata, *Thw.*
4768 —— Hookeriana, *Boeck.*
4769 —— scrobiculata, *NE.*
4770 —— lævis, *Retz.*
4771 Rhynchospora aurea, *NE.*
4772 —— Griffithii, *Boeck.*
4773 —— Chinensis, *NE.*
4774 —— Wallichiana, *NE.*
4775 —— Hookeri, *Boeck.*
4776 Elyna Royleana, *NE.*
4777 —— laxa, *NE.*
4778 —— schœnoides, *C. A. May.*
4779 —— spicata, *Schrad.*
4780 Diplacrum caricinum, *R. Br.*
4781 Hypolytrum latifolium, *Rich*

4782 Lipocarpha argentea, *R. Br.*
4783 —— sphacelata, *Kth.*
4784 Pandanophyllum palustre, *Hassk.*
4785 Anosporum cephalotes, *NE.*
4786 Fuirena glomerata, *Vhl.*
4787 —— ciliaris, *Roxb.*
4788 —— pentagona, *Wight.*
4789 Baumea crassa, *Thw.*
4790 Blysmus compressus, *Panz.*
4791 Fimbristylis falcata, *Kth.*
4792 —— salbundia, *NE.*
4793 —— ovalis, *NE.*
4794 —— biumbellulata, *Boeck.*
4795 —— miliacea, *Vhl.*
4796 —— Griffithii, *Boeck.*
4797 —— quinquangularis, *NE.*
4798 —— globulosa, *Vhl.*
4799 —— pallescens, *NE.*
4800 —— dichotoma, *Vhl.*
4801 —— comata, *NE.*
4802 —— schœnoides, *Vhl.*
4803 —— diphylla, *Vhl.*
4804 —— junciformis, *Steud.*
4805 —— complanata, *Lk.*
4806 —— oxylepis, *Steud.*
4807 —— acuminata, *Vhl.*
4808 —— cylindrocarpa, *Kth.*
4809 —— podocarpa, *NE.*
4810 —— tenella, *NE.*
4811 —— nutans, *Vhl.*
4812 —— ferruginea, *NE.*
4813 —— scaberrima, *NE.*
4814 —— capillaris, *R. and S.*
4815 —— Hookeriana, *Boeck.*
4816 —— filifolia, *Boeck.*
4817 Fimbristylis Thomsoni, *Boeck.*
4818 —— asperrima, *Boeck.*
4819 —— subtetrastachya, *Boeck.*
4820 Scirpus mucronatus, *L.*
4821 —— juncoides, *Roxb.*
4822 —— junciformis, *NE.*
4823 —— maritimus, *L.*
4824 —— affinis, *Roth.*
4825 —— grossus, *Roxb.*
4826 —— Chinensis, *Munro.*
4827 —— Wichurai, *Boeck.*
4828 —— Griffithii, *Boeck.*
4829 —— scaberrimus, *Boeck.*
4830 —— trialatus, *Boeck.*
4831 Heleocharis fistulosa, *Schult.*
4832 —— plantaginea, *NE.*
4833 —— capitata, *R. Br.*
4834 —— gracilis, *R. Br.*
4835 —— palustris, *R. Br.*
4836 —— ovata, *R. Br.*
4837 —— tetraquetra, *NE.*
4838 —— Thomsoni, *Boeck.*
4839 —— ochrostachys, *Stead.*
4840 —— acutangula, *NE.*
4841 —— spiralis, *P. B.*
4842 Abildgaardia fusca, *NE.*
4843 —— monostachya, *Vhl.*
4844 Chætocyperus setaceus, *NE.*
4845 Isolepis fluitans, *NE.*
4846 —— setacea, *R.Br.*
4847 —— prolongata, *NE.*
4848 —— supina, *R. Br.*
4849 —— squarrosa, *Vhl.*
4850 —— barbata, *R. Br.*
4851 —— trifida, *NE.*
4852 —— dipsacea, *R. and S.*

4853 Isolepis densa, *Wall.*
4854 —— juncoides, *Roxb.*
4855 —— Micheliana, *NE.*
4856 Kyllingia monocephala, *L.*
4857 —— brevifolia, *Rottb.*
4858 —— cylindrica, *NE.*
4859 —— triceps, *NE.*
4860 Curtoisia cyperoides, *NE.*
4861 Eriophorum comosum, *Wall.*
4862 —— microstachyum, *Boeck.*
4863 Cyperus pulvinatus, *NE.*
4864 —— vulgaris, *Sieb.*
4865 —— Nilagiricus, *Hochst.*
4866 —— Eragrostis, *Vhl.*
4867 —— sanguinolentus, *Vhl.*
4868 —— stramineus, *NE.*
4869 —— polystæhyus, *Vhl.*
4870 —— procerus, *Roxb.*
4871 —— angulatus, *NE.*
4872 —— mucronatus, *L.*
4873 —— patuliflorus, *Boeck.*
4874 —— pygmæus, *Vhl.*
4875 —— angustifolius, *NE.*
4876 —— castaneus, *Willd.*
4877 —— squarrosus, *Rotl.*
4878 —— aristatus, *Rotl.*
4879 —— compressus, *L.*
4880 —— Zollingeri, *Steud.*
4881 —— mœstus, *Kth.*
4882 —— Silhetensis, *NE.*
4883 —— pallidus, *Heyne.*
4884 —— diffusus, *Vhl.*
4885 —— complanatus, *Wight.*
4886 —— apicalis, *NE.*
4887 —— niveus, *Retz.*
4888 —— cephalotes, *Vhl.*
4889 —— Haspan, *L.*
4890 —— difformis, *L.*
4891 Cyperus Iria, *L.*
4892 —— articulatus, *L.*
4893 —— corymbosus, *Rotl.*
4894 —— tegetiformis, *Roxb.*
4895 —— Pangorei, *Roxb.*
4896 —— incurvatus, *Roxb.*
4897 —— pertenuis, *Roxb.*
4898 —— rotundus, *L.*
4899 —— pilosus, *Vhl.*
4900 —— venustus, *R. Br.*
4901 —— procerus, *Roth.*
4902 —— canescens, *Vhl.*
4903 —— Wallichii, *NE.*
4904 —— Neesii, *Kth.*
4905 —— digitatus, *Roxb.*
4906 —— elatus, *Roxb.*
4907 —— verticillatus, *Roxb.*
4908 —— alopecuroides, *Roxb.*
4909 —— distans, *L.*
4910 —— dilutus, *Vhl.*
4911 —— umbellatus, *Bth.*
4912 —— pauper, *Roxb.*
4913 —— fimbriatus, *NE.*
4914 —— paniceus, *Lk.*
4915 —— auricomus, *Sieb.*
4916 —— exaltatus, *Retz.*
4917 —— radiatus, *Schrad.*
4918 —— atratus, *Steud.*
4919 —— intermedius, *Steud.*
4920 —— latispicatus, *Boeck.*
4921 —— tenuicaulis, *Boeck.*
4922 —— Hookeri, *Boeck.*

GRAMINEÆ.

4923 Leersia hexandra, *Sw.*
4924 Oryza sativa, *L.*
4925 —— coarctata, *Roxb.*
4926 —— granularis, *NE.*
4927 —— officinalis, *Wall.*
4928 Hygrorhiza aristata, *NE.*

4929 Zea Mays, *L.*
4930 Coix Lacryma, *L.*
4931 —— Koenigii, *Sprg.*
4932 —— gigantea, *Koen.*
4933 —— aquatica, *Roxb.*
4934 Chionachne barbata, *Br.*
4935 Polytoca heteroclita, *Munro.*
4936 Holcus mollis, *L.*
4937 Milium effusum, *L.*
4938 Garnotia Griffithii, *Munro.*
4939 Paspalum scrobiculatum, *L.*
4940 —— brevifolium, *Flugge.*
4941 —— costatum, *Hochst.*
4942 —— distichum, *L.*
4943 —— vaginatum, *Sw.*
4944 —— conjugatum, *Retz.*
4945 —— pedicellatum, *NE.*
4946 —— filiculmum, *NE.*
4947 —— Royleanum, *NE.*
4948 Digitaria sanguinale, *L.*
4949 —— ciliare, *Retz.*
4950 —— commutatum, *NE.*
4951 Coridochloa cimicina, *Steud.*
4952 —— semialata, *Steud.*
4953 Oplismenus Burmanni, *Retz.*
4954 —— sylvaticus, *R. and S.*
4955 —— compositum, *L.*
4956 —— Indicus, *NE.*
4957 —— acuminatus, *NE.*
4958 Ichnanthus pallens, *Munro.*
4959 Echinochloa crus galli, *L.*
4960 —— colonum, *L.*
4961 —— frumentacea, *Rob.*
4962 —— hispidula, *NE.*
4963 —— stagnina, *Roxb.*
4964 —— glabrescens, *Munro.*
4965 Setaria glauca, *L.*
4966 —— verticillata, *P. B.*
4967 —— Italica, *Kth.*
4968 —— macrostachya, *H. B. K.*
4969 —— intermedia, *R. and S.*
4970 Panicum barbinode, *Trin.*
4971 —— prostratum, *Lamk.*
4972 —— Helopus, *Jacq.*
4973 —— procumbens, *NE.*
4974 —— Javanicum, *Poir.*
4975 —— fluitans, *Roxb.*
4976 —— brizoides, *L.*
4977 —— repens, *L.*
4978 —— psilopodium, *Trin.*
4979 —— paludosum, *Roxb.*
4980 —— uliginosum, *Roxb.*
4981 —— asperum, *Wight.*
4982 —— Petiverii, *Trin.*
4983 —— miliaceum, *L.*
4984 —— uncinnatum, *Raddi.*
4985 —— filipes, *NE.*
4986 —— plicatum, *Lamk.*
4987 —— auritum, *Prsl.*
4988 —— trigonum, *Retz.*
4989 —— ovalifolium, *Poir.*
4990 —— maximum, *Jacq.*
4991 —— nodosum, *Kth.*
4992 —— incisum, *Munro.*
4993 —— antidotale, *Retz.*
4994 —— longipes, *WA.*
4995 —— montanum, *Roxb.*
4996 —— miliare, *L.*
4997 —— incomptum, *Trin.*
4998 —— radicans, *Retz.*
4999 —— humile, *NE.*
5000 —— polystachyum, *Prsl.*
5001 —— villosum, *Lamk.*
5002 —— vestitum, *NE.*
5003 —— distachyum, *L.*

5004 Panicum zizanioides, *H. B. K.*
5005 —— repens, *L.*
5006 —— excurrens, *Trin.*
5007 Thysanolæna acarifera, *NE.*
5008 Eriochloa punctata, *Kth.*
5009 Hymenachne myurus, *P.B.*
5010 —— interrupta, *Buse.*
5011 —— Indica, *L.*
5012 —— angustata, *Trin.*
5013 Isachne elegans, *WA.*
5014 —— australis, *R. Br.*
5015 —— miliacea, *Kth.*
5016 —— albens, *Trin.*
5017 —— Griffithii, *Munro.*
5018 —— geniculata, *Wall. and Griff.*
5019 Penicillaria spicata, *Lamk.*
5020 Pennisetum cenchroides, *Rich.*
5021 —— triflorum, *NE.*
5022 Cenchrus echinatus, *L.*
5023 Centotheca lappacea, *Desv.*
5024 Berghausia polygonoides, *Munro.*
5025 —— adscendeus, *Munro.*
5026 Arundinella Wallichii, *Pers.*
5027 —— setosa, *Trin.*
5028 —— agrostoidea, *Trin.*
5029 —— avenacea, *Munro.*
5030 —— nervosa, *NE.*
5031 —— Hookeri, *Munro.*
5032 —— Khasyana, *NE.*
5033 —— Nepalensis, *Trin.*
5034 —— miliacea, *NE.*
5035 Sporobolus Indicus, *R. Br.*
5036 —— diander, *Trin.*
5037 —— elongatus, *R. Br.*
5038 —— tenacissimus, *Roxb.*
5039 Agrostis alba, *L.*
5040 —— canina, *L.*
5041 —— Wightii, *NE.*
5042 —— abnormis, *Munro.*
5043 —— nervosa, *NE.*
5044 —— Hookeriana, *Munro.*
5045 —— verticillata, *NE.*
5046 Muehlenbergia viridissima, *NE.*
5047 Polypogon Monspeliensis, *Desf.*
5048 —— littoralis, *L.*
5049 —— Nepalensis, *Munro.*
5050 Perotis latifolia, *Ait.*
5051 Calamagrostis Nepalensis, *NE.*
5052 Deyeuxia scabrescens, *Munro.*
5053 —— elata, *Munro.*
5054 Orthorhaphium Roylei, *NE.*
5055 Piptatherum holciforme, *R. and Sch.*
5056 —— æquiglume, *Munro.*
5057 Lasiagrostis Mongolica, *Trin.*
5058 —— splendens, *Kth.*
5059 Aristida depressa, *Retz.*
5060 —— capillacea, *L.*
5061 —— setacea, *Retz.*
5062 Alopecurus geniculatus, *L.*
5063 Phleum alpinum, *L.*
5064 Arundo Roxburghii, *Wight.*
5065 —— Madagascariensis, *Kth.*
5066 —— Bengalensis, *L.*
5067 —— Donax, *L.*
5068 Phragmites Roxburghii, *Kth.*
5069 Microchloa setacea, *R. Br.*

5070 Chloris barbata, *Sw.*
5071 —— digitata, *Steud.*
5072 —— polystachya, *Roxb.*
5073 Leptochloa Chinensis, *NE.*
5074 —— filiformis, *R. and Sch.*
5075 —— Wightiana, *Retz.*
5076 —— cynosaroides. *Hochst.*
5077 Eleusine Indica, *Gaertn.*
5078 —— coracana, *Gaertn.*
5079 —— verticillata, *Roxb.*
5080 Deschampsia cæspitosa, *P. B.*
5081 Trisetum virescens, *NE.*
5082 —— aureum, *Ten.*
5083 —— subspicatum, *P. B.*
5084 —— flavescens, *P. B.*
5085 Avena fatua, *L.*
5086 —— aspera, *Munro.*
5087 —— pratensis, *L.*
5088 —— sativa, *L.*
5089 Dactyloctenium Ægyptiacum, *Pers.*
5090 Cynodon Dactylon, *Rich.*
5091 —— gracile, *NE.*
5092 Aira caryophyllea, *L.*
5093 Dupontia nutans, *Munro.*
5094 Attaxia, *Sp.*
5095 Eriachne Chinenis, *Hance.*
5096 Danthonia Kashmiriana, *Jaub. and Spach.*
5097 Poa annua, L.
5098 —— alpina, L.
5099 —— laxa, *Haenke.*
5100 —— flexuosa, *Whlbg.*
5101 —— Nepalensis, *Whlbg.*
5102 —— Himalayana, *NE.*
5103 Eragrostis pilosa, *P. B.*
5104 —— flexuosa, *Roxb.*
5105 —— nigra, *NE.*
5106 —— verticillata, *P. B.*
5107 Eragrostis tenella, *NE.*
5108 —— nutans, *NE.*
5109 —— plumosa, *Lk.*
5110 —— viscosa, *Trin.*
5111 —— unioloides, *NE.*
5112 —— Brownei, *NE.*
5113 —— multiflora, *NE.*
5114 —— procera, *NE.*
5115 —— cylindrica, *NE.*
5116 —— poæoides, *P. B.*
5117 —— diandra, *Roxb.*
5118 —— bifaria, *WA.*
5119 —— rubens, *Hochst.*
5120 Cœlachne pulchella, *R.Br.*
5121 Glyceria aquatica, *Sm.*
5122 Lophatherum Lehmanni, *NE.*
5123 Elythrophorus articulatus, *P. B.*
5124 Tripogon bromoides, *R. and Sch.*
5125 —— filiformis, *NE.*
5126 —— trifidus, *Munro.*
5127 Festuca ovina, *L.*
5128 —— elastior, *L.*
5129 —— uniglumis, *Sol.*
5130 —— duriuscula, *L.*
5131 Brachypodium sylvaticum, *P. B.*
5132 Bromus mollis, *L.*
5133 —— asper, *Murr.*
5134 —— confinis, *NE.*
5135 Arundinaria racemosa, *Munro.*
5136 —— Griffithiana, *Munro.*
5137 —— falcata, *NE.*
5138 —— Khasiana, *Munro.*
5139 —— intermedia, *Munro.*
5140 —— Hookeriana, *Munro.*
5141 —— callosa, *Munro.*

5142 Arundinaria hirsuta, *Munro.*
5143 —— microphylla, *Munro.*
5144 —— suberecta, *Munro.*
5145 —— Falconeii, *Kurz.*
5146 —— spathiflora, *Trin.*
5147 Phyllostachys bambusoides, *S. and Z.*
5148 Bambusa nana, *Roxb.*
5149 —— Tulda, *Roxb.*
5150 —— nutans, *Wall.*
5151 —— teres, *Ham.*
5152 —— pallida, *Munro.*
5153 —— Khasiana, *Munro.*
5154 —— Balcooa, *Roxb.*
5155 —— arundinacea, *Retz.*
5156 —— spinosa, *Roxb.*
5157 —— vulgaris, *Wendl.*
5158 —— Mastersii, *Munro*
5159 —— auriculata, *Kz.*
5160 Gigantochloa nigro-ciliata, *Munro.*
5161 Melocanna bambusoides, *Trin.*
5162 Cephalostachyum capitatum, *Munro.*
5163 —— pallidum, *Munro.*
5164 —— latifolium, *Munro.*
5165 Pseudostachyum polymorphum, *Munro.*
5166 Dendrocalamus strictus, *NE.*
5167 —— sericeus, *Munro.*
5168 —— Hookeri, *Munro.*
5169 —— Hamiltonii, *NE.*
5170 Hordeum distichum, *L.*
3171 —— vulgare, *Vill.*
5172 Elymus Sibiricus, *L.*
5173 Lolium temulentum, *L.*
5174 Triticum vulgare, *Vill.*
5175 —— longiaristatum, *Boiss.*
5176 Hæmarthria compressa, *R. Br.*
5177 Vossia procera, *Wall. and Griff.*
5178 Ophiurus corymbosus, *Kth.*
5179 Mnesithea lævis, *Kth.*
5180 Rottboellia exaltata, *L.*
5181 —— glabra, *Roxb.*
5182 —— Khasyana, *Munro.*
5183 —— striata, *NE.*
5184 Manisuris granularis, *Sw.*
5185 Schizachyrium brevifolius, *NE.*
5186 —— Hystrix, *Kz.*
5187 Andropogon Gryllus, *L.*
5188 —— Royleanus, *NE.*
5189 —— acicularis, *Retz.*
5190 —— montanus, *Roxb.*
5191 —— glaucopsis, *Steud.*
5192 —— villosulus, *NE.*
5193 —— muricatum, *L.*
5194 —— muticum, *NE.*
5195 —— tropicum, *L.*
5196 —— Sorghum, *L.*
5197 —— Halepensis, *L.*
5198 —— Zeylanicus, *Arn.*
5199 —— involutus, *Steud.*
5200 —— annulatus, *L.*
5201 —— scandens, *Roxb.*
5202 —— polystachyus, *Roxb.*
5203 —— pseudo-Ischæmum, *NE.*
5204 —— pertusum, *L.*
5205 —— Hookeri, *Munro.*
5206 —— amplifolius, *Steud.*
5207 —— Schœnanthus, *L.*
5208 —— citriodorus, *Dc.*
5209 —— Nardus, *L.*
5210 —— Khasyanus, *Munro.*

5211 Hologamium nervosum, *NE.*
5212 Heteropogon contortus, *L.*
5213 Meoschium imbricatum *Munro*
5214 —— elegans, *WA.*
5215 —— rugosum, *Gaertn.*
5216 Spodiopogon angustifolium, *NE.*
5217 —— obliquivalve, *NE.*
5218 Apocopis Royleanus, *NE.*
5219 —— Wightii, *NE.*
5220 Batratherum molle, *NE.*
5221 —— lancifolius, *Trin.*
5222 —— nudum, *NE.*
5223 —— echinatum, *NE.*
5224 —— plumbeum, *NE.*
5225 Androscepia gigantea, *Brongn*
5226 Anthistyria prostrata, *Roxb.*
5227 —— arundinacea, *NE.*
5228 —— ciliata, *Retz.*
5229 —— scandens, *Roxb.*
5230 Apluda aristata, *L.*
5231 —— mutica, *L.*
5232 —— geniculata, *Roxb.*
5233 Imperata arundinacea, *Cyrill.*
5234 Saccharum spontaneum, *L.*
5235 —— fuscum,
5236 —— procerum, *Roxb.*
5237 —— officinarum, *L.*
5238 —— Sara, *Roxb.*
5239 —— Narenga, *Trin.*
5240 Pollinia Lehmanni, *NE.*
5241 —— vagans, *NE.*
5242 —— imberbis, *NE.*
5243 —— ciliata, *Trin.*
5244 —— nuda, *NE.*
5245 —— Wallichiana, *NE.*
5246 Pollinia micrantha, *NE.*
5247 Erianthus velutinus, *Munro.*
5248 —— Japonicus, *P. B.*
5249 —— tristachyus, *Trin.*
5250 Pogonatherum crinitum, *P. B.*
5251 —— rufo-barbatum, *Wall.*
5252 Eulalia Nepalensis, *Trin.*
5253 Dimeria ornithopoda, *Trin*
5254 —— tenera, *Trin.*
5255 —— fuscescens, *Trin.*
5256 Zoysia pungens, *Willd.*

EQUISETACEÆ.

5257 Equisetum debile, *Roxb.*
5258 —— diffusum. *Don.*

MARSILEACEÆ.

5259 Marsilea crosa *Willd*
5260 Salvinia natans, *L.*
5261 —— cucullata, *Roxb.*
5262 Azolla pinnata, *R. Br.*

LYCOPODIACEÆ.

5263 Selaginella semicordata, *Spring.*
5264 —— chrysocaulon, *Spring.*
5265 —— tenera, *Spring.*
5266 —— imbricata, *Roxb.*
5267 —— rupestris, *Spring.*
5268 —— caulescens, *Spring.*
5269 —— Belangeri, *Spring.*
5270 —— lævigata, *Spring.*
5271 —— monospora, *Spring*
5272 —— Wallichii, *Spring.*
5273 —— atroviride, *Wall.*
5274 Lycopodium clavatum, *L.*
5275 —— subulifolium, *Hook and Grev.*
5276 —— Hookeri, *Wall.*

5277 Lycopodium annotinum, *L.*
5278 —— complanatum, *L.*
5279 —— aloifolium, *Wall.*
5280 —— comans, *Hf.*
5281 —— cernuum, *L.*
5282 —— phlegmaria, *L.*
5283 —— serratum, *Thlg.*
5284 —— squarrosum, *Forst.*
5285 Psilotum triquetrum, *L.*

OPHIOGLOSSACEÆ.

5286 Osmunda Claytoniana, *L.*
5287 —— cinnamomea, *L.*
5288 —— regalis, *L.*
5289 Lygodium dichotomum, *Sw.*
5290 —— scandens, *Sw.*
5291 —— pinnatifidum, *Bak.*
5292 —— Japonicum, *Sw.*
5293 Angiopteris evecta, *Hoffm.*
5294 Kaulfussia æsculifolia, *Bl.*
5295 Helminthostachys Zeylanica, *Hook.*
5296 Ophiogosslum vulgatum, *L.*
5297 —— reticulatum, *Bak.*
5298 Botrychium daucifolium, *Wall.*
5299 —— Virginicum, *Sw.*

FILICES.

5300 Gleichenia longissima, *Bl.*
5301 —— dichotoma, *Willd.*
5302 Cyathea spinulosa, *Wall.*
5303 Hemitelia decipiens, *Sctt.*
5304 Alsophila Scottii, *Bak.*
5305 —— Brunoniana, *Wall.*
5306 —— glabra, *Hook.*
5307 —— latebrosa, *Hook.*
5308 —— Andersoni, *Sctt.*
5309 —— ornata, *Sctt.*
5310 —— comosa, *Hook.*
5311 Diacalpe aspidioides, *Bl.*
5312 Onoclea orientalis, *Bak.*
5313 Sphœropteris barbata, *Wall.*
5314 Woodsia lanosa, *Hook.*
5315 Dicksonia Barometz, *Lk.*
5316 —— scabra, *Wall.*
5317 —— appendiculata, *Wall.*
5318 Hymenophyllum exsertum, *Wall,*
5319 —— microsorum, *Bak.*
5320 —— polyanthos, *Sw.*
5321 —— badium, *Hook and Grev.*
5322 —— Javanicum, *Bl.*
5323 —— Simonsianum, *Hook.*
5324 —— flaccidum, *Bak.*
5325 Trichomanes Filicula, *Bory.*
5326 —— pyxidiferum, *L.*
5327 —— radicans, *Sw.*
5328 —— auriculatum, *Bl.*
5329 —— Javanicum, *Bl.*
5330 —— nanum, *Bosch.*
5331 Davallia pedata, *Sw.*
5332 —— membranulosa, *Wall.*
5333 —— micans, *Mett.*
5334 —— pteropus, *Bedd.*
5335 —— immersa, *Wall.*
5336 —— multidentata, *Hook.*
5337 —— pulchra, *Don.*
5338 —— repens, *Desv.*
5339 —— chærophylla, *Wall.*
5340 —— Griffithiana, *Hook.*
5341 —— bullata, *Wall.*
5342 —— Hookeriana, *Wall.*
5343 —— villosa, *Wall.*
5344 —— nodosa, *Hook.*
5345 —— elegans, *Sw.*
5346 —— strigosa, *Sw.*

5347 Davallia platyphylla, *Don.*
5348 —— hirta, *Kaulf.*
5349 —— speluncæ, *Bak.*
5350 —— tenuifolia, *Sw.*
5351 —— divaricata, *Bl.*
5352 —— urophylla, *Hook.*
5353 Cystopteris setosa, *Bedd.*
5354 Lindsæa cultrata, *Sw.*
5355 —— flabellulata, *Dry.*
5356 —— lanceolata, *Lab.*
5357 —— pectinata, *Bl.*
5358 Adiantum lunulatum, *L.*
5359 —— caudatum, *L.*
5360 —— Capillus veneris, *L.*
5361 —— pedatum, *L.*
5362 —— flabellulatum, *L.*
5363 Cheilanthes varians, *Thw.*
5364 —— Dalhousiana, *Hook.*
5365 —— tenuifolia, *Sw.*
5366 —— rufa, *Don.*
5367 —— argentea, *Hook.*
5368 —— farinosa, *Kaulf.*
5369 Onychium auratum, *Klf.*
5370 —— Japonicum, *Knze.*
5371 Cryptogramme crispa, *R. Br.*
5372 Pellaea pedata, *L.*
5373 —— Tamburii, *Hook.*
5374 Pteris longifolia, *L.*
5375 —— Cretica, *L.*
5376 —— serrulata. *L. f.*
5377 —— crenata, *Sw.*
5378 —— semipinnata, *L.*
5379 —— quadriaurita, *Retz.*
5380 —— excelsa, *Gaud.*
5381 —— pellucens, *Hook.*
5382 —— aquilina, *L.*
5383 —— biaurita, *L.*
5384 —— Wallichiana, *Ag.*
5385 Pteris incisa, *Thbg.*
5386 —— dactylina, *Hook.*
5387 —— Griffithii, *Hook.*
5388 —— longipinnula, *Wall.*
5389 —— tripartita, *Sw.*
5390 Lomaria Patersoni, *Sprg.*
5391 —— adnata, *Bl.*
5392 —— glauca, *Bl.*
5393 —— pycnophylla, *Knze.*
5394 —— euphlebia, *Knze.*
5395 Ceratopteris thalictroides, *Brong.*
5396 Blechnum orientale, *L.*
5397 —— melanopus, *Hook.*
5398 Woodwardia radicans, *Sm.*
5399 Asplenium Nidus, *L.*
5400 —— ensiforme, *Wall.*
5401 —— stenophyllum, *Bedd.*
5402 —— Griffithianum, *Hook.*
5403 —— alternans, *Wall.*
5404 —— normale, *Don.*
5405 —— falcatum, *Lamk.*
5406 —— resectum, *Sm.*
5407 —— heterocarpum, *Wall.*
5408 —— planicaule, *Wall.*
5409 —— laciniatum, *Don.*
5410 —— nitidum, *Sw.*
5411 —— bulbiferum, *Forst.*
5412 —— tenuifolium, *Don.*
5413 —— rutæfolium, *Knze.*
5414 —— Hohenackerianum, *Knze.*
5415 —— thelypteroides, *Mich.*
5416 —— macrocarpum, *Bl.*
5417 —— nigripes, *Bl.*
5418 —— Felix femina, *Bernh.*
5419 —— longissimum, *Bl.*
5420 —— oxyphyllum, *Baker.*
5421 —— fimbriatum, *Wall.*
5422 —— umbrosum, *J. Sm.*

5423 Asplenium australe, *Brack.*
5424 —— lanceum, *Thbg.*
5425 —— Bantamense. *Bak.*
5426 —— sylvaticum, *Prsl.*
5427 —— sorzogonense, *Prsl.*
5428 —— polypodioides, *Mett.*
5429 —— Griffithii, *Bak.*
5430 —— dilatatum, *Wall.*
5431 —— heterophlebium, *Mett.*
5432 —— esculentum, *Prsl.*
5433 —— Finlaysonianum, *Wall.*
5434 —— Simonsianum, *Hook.*
5435 —— subtriangulare, *Hook.*
5436 —— pinnatifido-pinnatum, *Hook.*
5437 —— tomentosum, *Hook.*
5438 —— Japonicum, *Thbg.*
5439 Allantodia Brunoniana, *Wall.*
5440 Actiniopteris radiata, *Wall.*
5441 Didymochlæna lunulata, *Desr.*
5442 Aspidium Lachanense, *Hook.*
5443 —— auriculatum, *Sw*
5444 —— ilicifolium, *Don.*
5445 —— Thomsoni, *Hook*
5446 —— aculeatum, *Sw.*
5447 —— Prescottianum, *Wall.*
5448 —— Sikkimense, *Baker.*
5449 —— aristatum, *Sw.*
5450 —— fœniculaceum, *Hook.*
5451 —— caducum, *Wall.*
5452 —— falcatum, *Sw.*
5453 Nephrodium cuspidatum, *Bak*
5454 —— hirtipes, *Hook.*
5455 —— gracilescens, *Hook.*
5456 Nephrodium calcaratum, *Hook.*
5457 —— Ochthodes, *Knze.*
5458 —— prolixum, *Bak.*
5459 —— apiciflorum, *Hook.*
5460 —— syrmaticum, *Bak.*
5461 —— Filix mas, *Rich.*
5462 —— patentissima, *Wall.*
5463 —— flaccidum, *Hook.*
5464 —— Brunonianum, *Hook.*
5465 —— barbigerum, *Hook.*
5466 —— sparsum, *Don.*
5467 —— odoratum, *Baker.*
5468 —— recedens, *Hook.*
5469 —— membranifolium, *Prsl.*
5470 —— splendens, *Hook.*
5471 —— pulvinuliferum, *Bedd.*
5472 —— intermedium, *Bak.*
5473 —— Boryanum, *Bak.*
5474 —— unitum, *R. Br.*
5475 —— pteroides, *Baker.*
5476 —— extensum, *Hook.*
5477 —— cucullatum, *Baker.*
5478 —— hirsutum, *Sm.*
5479 —— molle, *Desv.*
5480 —— crinipes, *Hook.*
5481 —— abruptum, *Bl.*
5482 —— truncatum, *Prsl.*
5483 —— Leuzeanum, *Hook.*
5484 —— vastum, *Bak.*
5485 —— irriguum, *Bak.*
5486 —— polymorphum, *Baker.*
5487 —— variolosum, *Bak.*
5488 —— decurrens, *Bak.*
5489 —— cicutarium, *Bak.*
5490 —— coadunatum, *Bedd.*
5491 —— giganteum, *Bak.*
5492 —— immersum, *Hook.*
5493 —— canum, *Bak.*
5494 —— platypus, *Hook.*

5495 Nephrodium glandulosum, *Sm.*
5496 —— asperulum, *Sctt.*
5497 —— sericeum, *Sctt.*
5498 —— erythrorachis, *Sctt.*
5499 Nephrolepis tuberosa, *Prsl*
5500 —— exaltata, *Schott.*
5501 —— acuta, *Prsl.*
5502 Oleandra neriiformis, *Cav.*
5503 —— Wallichii, *Hook.*
5504 —— Cumingii, *Sm.*
5505 Polypodium auriculatum, *Wall.*
5506 —— distans, *Don*
5507 —— punctatum, *Thbg.*
5508 —— ornatum, *Wall.*
5509 —— trichodes, *Reinw.*
5510 —— urophyllum, *Wall.*
5511 —— prolifcrum, *Prsl.*
5512 —— lineatum, *Colebr.*
5513 —— multilineatum, *Wall.*
5514 —— macrodon,
5515 —— Khasianum, *Hook.*
5516 —— trichomanoides, *Swz.*
5517 —— subfalcatum, *Bl.*
5518 —— subdigitatum,
5519 —— amœnum, *Wall.*
5520 —— lachnopus, *Wall.*
5521 —— microrhizon, *Clarke.*
5522 —— Hendersoni, *Atk.*
5523 —— subamœnum, *Clarke.*
5524 —— subauriculatum, *Bl*
5525 —— adnascens, *Sw.*
5526 —— acrostichoides, *Sw.*
5527 —— Lingua, *Sw.*
5528 —— stigmosum, *Sw.*
5529 —— subfurfuraceum, *Hook.*
5530 —— nummulariæfolium, *Mett*
5531 Polypodium fissum, *Bak.*
5532 —— flocculosum, *Don*
5533 —— rostratum, *Hook.*
5534 —— lineare, *Thbg.*
5535 —— superficiale, *Bl.*
5536 —— normale, *Don.*
5537 —— rhynchophyllum, *Hook.*
5538 —— Griffithianum, *Hook.*
5539 —— ovatum, *Wall.*
5540 —— membranaceum, *Don.*
5541 —— heterocarpum, *Bak*
5542 —— irioides, *Lam.*
5543 —— hemionitideum, *Wall.*
5544 —— pteropus, *Bl.*
5545 —— Wallichii, *R. Br.*
5546 —— oxylobum, *Wall.*
5547 —— malacodon, *Bak.*
5548 —— Stewartii, *Bedd.*
5549 —— phymatodes, *L.*
5550 —— nigrescens, *Bl.*
5551 —— dilatatum, *Wall.*
5552 —— ebenipes, *Hook.*
5553 —— longissimum, *Bl.*
5554 —— erythrocarpon, *Clarke.*
5555 —— conjugatum, *Sm.*
5556 —— propinquum, *Wall.*
5557 —— quercifolium, *L.*
5558 —— juglandifolium, *Don.*
5559 —— Lehmanni, *Mett*
5560 —— Himalayense, *Hook.*
5561 —— leiorhizon, *Wall.*
5562 —— erubescens, *Wall.*
5563 —— dareæforme, *Hook.*
5564 —— Boothii, *Hook.*
5565 —— rivale, *Mett.*
5566 Gymnogramme totta, *Bl*
5567 —— aurita, *Hook*
5568 —— opaca, *Sprcng*
5569 —— Javanica, *Bl*

5570 Gymnogramme microphylla, *Hook.*
5571 —— lanceolata, *Sw.*
5572 —— involuta, *Don.*
5573 —— Hamiltoniana, *Hook.*
5574 —— elliptica, *Bak.*
5575 —— aspidioides, *Hook.*
5576 Brainea insignis, *Hook.*
5577 Meniscium triphyllum, *Sw.*
5578 —— cuspidatum, *Bl.*
5579 Antrophium coriaceum, *Bl.*
5580 —— plantagineum, *Kaulf.*
5581 —— latifolium, *Bl.*
5582 Vittaria elongata, *Sw.*
5583 —— lineata, *Sm.*
5584 Drymoglossum carnosum, *Hook.*
5585 —— piloselloides, *Prsl.*
5586 Hemionitis cordata, *Roxb.*
5587 —— Griffithii, *Hf. and Th.*
5588 Acrostichum conforme, *Sw.*
5589 —— viscosum, *Sw.*
5590 —— scandens, *J. Sm.*
5591 —— appendiculatum, *Willd.*
5592 —— variabile, *Hook.*
5593 —— flagelliferum, *Wall.*
5594 —— virens, *Wall.*
5595 —— minus, *Mett.*
5596 —— axillare, *Cav.*
5597 —— tricuspe, *Hook.*
5598 —— aureum, *L.*
5599 —— spicatum, *L.*
5600 —— Blumeanum, *Hook.*
5601 Platycerium biforme, *Bl.*

CHARACEÆ.

5602 Nitella flagelliformis, *A. Br.*
5603 —— Roxburghii, *A. Br.*
5604 —— oligospira, *A. Br.*
5605 Chara corallina, *Willd.*
5606 —— verticillata, *Roxb.*
5607 —— furcata, *Roxb.*
5608 —— involucrata, *Roxb.*
5609 —— coronata, *Ziz.*
5610 —— brachypus, *A. Braun.*
5611 —— fœtida, *A. Braun.*
5612 —— flaccida, *A. Braun.*
5613 —— gymnopus, *A. Braun*

MUSCI.

5614 Andreæa rigida, *Wils.*
5615 —— commutata, *C. Muell.*
5616 —— Indica, *Mitt.*
5617 —— densifolia, *Mitt.*
5618 Pleuridium tenue, *Mitt.*
5619 Garckea phascoides, *C. Muell.*
5620 Leptotrichum Khasianum *Mitt.*
5621 —— pomiforme, *Mitt.*
5622 —— tortile, *Hampe.*
5623 —— divaricatum, *Mitt.*
5624 —— Griffithii, *Mitt.*
5625 —— amplexans, *Mitt.*
5626 —— tortipes, *Mitt.*
5627 —— laxissimum, *Mitt.*
5628 —— capillaceum, *Mitt.*
5629 —— inclinatum, *Mitt.*
5630 —— setiferum, *Mitt.*
5631 —— heteromallum, *Mitt.*
5632 —— patulum, *Mitt.*
5633 —— Himalayanum, *Mitt.*
5634 —— Reinwardti, *Mitt.*
5635 —— Wahlenbergii, *Mitt.*
5636 Ditrichum apophysatum, *Hpe.*
5637 Trematodon Hookeri, *C. Muell.*
5638 —— conformis, *Mitt.*

5639 Trematodon sabulosus, *Griff.*
5640 —— megapophysatus, *C. Muell.*
5641 Leucoloma Taylori, *Mitt.*
5642 —— amœne-virens, *Mitt.*
5643 Dicranum gymnostomum, *Mitt.*
5644 —— Himalayanum, *Mitt.*
5645 —— assimile, *Hampe.*
5646 —— lorifolium, *Mitt.*
5647 —— palustre, *Brid.*
5648 —— fragile, *Hook.*
5649 —— Bergeri, *Bland.*
5650 —— decipiens, *Mitt*
5651 —— latinerve, *Mitt.*
5652 —— gracile, *Mitt.*
5653 —— pyriforme, *Schult.*
5654 —— Goughii, *Mitt.*
5655 —— ericoides, *Griff.*
5656 —— sordidum, *Wils.*
5657 —— nigrescens, *Mitt.*
5658 —— laetum, *Mitt.*
5659 —— ericetorum, *Mitt.*
5660 —— uncinatum, *Harv.*
5661 —— Dicticyon, *Mitt.*
5662 —— didymodon, *Griff.*
5663 —— cæspitosum, *Mitt.*
5664 —— asperulum, *Mitt.*
5665 —— attenuatum, *Mitt.*
5666 —— subreflexifolium, *C. Muell.*
5667 —— crispifolium, *C. Muell.*
5668 —— leptocaule, *C. Muell.*
5669 —— subreflexum, *C. Muell.*
5670 —— integerrimum, *C. Muell.*
5671 Dicranella.
5672 —— aciculata, *C. Muell.*
5673 Dicranella pseudosubulata, *C. Muell.*
5674 —— tomentosula, *C. Muell.*
5675 —— asperula, *Hpe.*
5676 —— villicaulis, *Hpe.*
5677 Pottia vernicosa, *Hpe.*
5678 —— rufescens, *C. Muell.*
5679 Gymnostomum Kurzii, *Hpe.*
5680 —— purpurascens, *Hpe.*
5681 Didymodon squarrosus, *Hook.*
5682 —— gracilescens, *Mitt.*
5683 —— laxifolius, *Mitt.*
5684 —— dentatus, *Mitt.*
5685 —— crenulatus, *Mitt.*
5686 —— stenocarpus, *Mitt.*
5687 Holomitrium Griffithianum, *Mitt.*
5688 —— Indicum, *Mitt.*
5689 —— crispulum, *Mitt.*
5690 —— alpinum, *Mitt.*
5691 Leucophanes glaucus, *Mitt.*
5692 —— octoblepharoides, *Brid.*
5693 Octoblepharum albidum, *Hedw.*
5694 Splachnobryum Indicum, *Hpe.*
5695 Leucobryum Javense, *Mitt.*
5696 —— sanctum, *Hampe.*
5697 —— aduncum, *Doz. and Molk.*
5698 —— Nilghiriense, *C. Muell.*
5699 —— Bowringii, *Mitt.*
5700 —— sanctum, *Hpe.*

5701 Schistomitrium Gardnerianum, *Mitt.*
5702 Rhabdoweisia.
5703 Tortula Drummondii, *Mitt.*
5704 —— anomala, *Mitt.*
5705 —— longifolia, *Mitt.*
5706 —— cylindrica, *Mitt.*
5707 —— stenophylla, *Mitt.*
5708 —— Khasiana, *Mitt.*
5709 —— flavescens, *Hook. and Grev.*
5710 —— gregaria, *Mitt.*
5711 —— Indica, *Hook.*
5712 —— angustifolia, *Hook. and Grev.*
5713 —— cylindrotheca, *Mitt.*
5714 Anoectangium clarum, *Mitt.*
5715 —— Thomsoni, *Mitt.*
5716 Hymenostylium xanthocarpum, *Brid.*
5717 —— aurantiacum, *Mitt.*
5718 —— curvirostrum, *Mitt.*
5719 —— vermicosum, *Mitt.*
5720 —— inconspicuum, *Griff.*
5721 Barbula rufescens, *Mitt*
5722 —— vinealis, *Brid.*
5723 —— obscura, *Mitt.*
5724 —— constricta, *Mitt.*
5725 —— hastata, *Mitt.*
5726 —— recurvifolia, *Mitt.*
5727 —— asperifolia, *Mitt.*
5728 —— albicuspis, *Mitt.*
5729 —— comosa, *Doz. and Molk.*
5730 —— ovata, *Mitt.*
5731 —— nigrescens, *Mitt.*
5732 —— confertifolia, *Mitt.*
5733 —— subramosa, *C. Muell.*
5734 —— Gangetica, *C. Muell.*
5735 Barbula Kurzii, *C. Muell.*
5736 —— subramosa, *C. Muell.*
5737 —— horridifolia, *C. Muell.*
5738 —— ferruginea, *Hampe.*
5739 —— marginatula, *C. Muell.*
5740 Trichostomum orientale, *Willd.*
5741 —— Indicum, *Schw.*
5742 —— thelinemon, *C. Muell.*
5743 Symblepharis Hookeri, *Wils.*
5744 —— Kurzii, *Hampe.*
5745 Angstroemia acutifolia, *Hpe.*
5746 —— subexigua, *C. Muell.*
5747 Desmatodon latifolius, *Brid.*
5748 —— longirostris, *Muell.*
5749 —— recurvus, *Mitt.*
5750 —— Wallichii, *Mitt.*
5751 —— Javanicus, *Mitt.*
5752 —— spathulatus, *Mitt.*
5753 Syntrichia princeps, *Mitt.*
5754 Syrrhopodon heterophyllus, *Mitt.*
5755 —— Gardneri, *Schw.*
5756 Erpodium Mangiferæ, *C. Muell.*
5757 Calymperes fasciculatum, *Mitt.*
5758 —— tenerum, *C. Muell.*
5759 Hyophila Kurziana, *Hpe.*
5760 —— Hookeri, *Hpe.*
5761 —— Harveyana, *Hpe.*
5762 Grimmia apocarpa, *Hedw.*
5763 —— leucophlœa, *Grev.*
5764 —— reduncа, *Mitt.*
5765 —— inflectens, *Mitt.*
5766 —— macrotheca, *Mitt.*

5767 Grimmia ovata, *Web. and Mohr.*
5768 —— strictifolia, *Mitt.*
5769 —— fuscescens, *Mitt.*
5770 —— apophysata, *Hpe.*
5771 Guembelia commutata.
5772 Rhacomitrium subsecundum, *Hook.*
5773 —— lanuginosum, *Mitt.*
5774 —— canescens, *Mitt.*
5775 —— Himalayanum, *Mitt.*
5776 —— Khasianum, *Mitt.*
5777 —— Nepalense, *Mitt.*
5778 —— elongatum, *Mitt.*
5779 —— subheterostichum, *C. Muell.*
5780 —— lorifolium, *Hpe.*
5781 Glyphomitrium Tortula, *Mitt.*
5782 Zygodon obtusifolius, *Hook.*
5783 —— brevisetus, *Wils.*
5784 —— strictus, *Mitt.*
5785 Orthotrichum speciosum, *NE.*
5786 —— Hookeri, *Wils.*
5787 Ulota robusta, *Mitt.*
5788 Macromitrium Perottetii, *C. Muell.*
5789 —— Assamicum, *Mitt.*
5790 —— Nepalense, *Schw.*
5791 —— Moorcroftii, *Schwaeg.*
5792 —— densum, *Mitt.*
5793 —— sulcatum, *Brid.*
5794 —— goniorhynchum, *Mitt.*
5795 Schlottheimia Grevilleana, *Mitt.*
5796 Physcomitrium repandum,
5797 —— pulchellum, *Mitt.*
5798 —— cyathicarpum, *Mitt.*
5799 Entosthodon Wallichii, *Mitt.*
5800 Funaria hygrometrica, *Dill.*
5801 —— leptopoda, *Griff.*
5802 —— Nepalensis, *C. Muell.*
5803 Voitia Hookeri, *Mitt.*
5804 Tayloria Indica, *Mitt.*
5805 —— subglabra, *Mitt.*
5806 Splachnum urceolatum, *Bryol. Eur.*
5807 —— mnioides, *Hedw.*
5808 —— angustatum, *L.*
5809 Meesia uliginosa, *Hedw.*
5810 Oreas Martiana, *Brid.*
5811 Bartramia Halleriana, *Hedw.*
5812 —— subulata, *Br. and Schimp.*
5813 —— leptodonta, *Wils.*
5814 —— subpellucida, *Mitt.*
5815 —— dicranacea, *C. Muell.*
5816 —— sublævissima, *C. Muell.*
5817 —— Kurziana, *C. Muell.*
5818 Philonotis Griffithiana, *Mitt.*
5819 —— glomerata, *Mitt.*
5820 —— leptocarpa, *Mitt.*
5821 —— subulosa, *Mitt.*
5822 —— angusta, *Mitt.*
5823 —— laxissima, *Mitt.*
5824 —— Turneriana, *Mitt.*
5825 —— falcata, *Mitt.*
5826 —— fontana, *Brid.*
5827 —— lutea, *Mitt.*
5828 —— speciosa, *Mitt.*
5829 —— longicollis, *Hampe.*
5830 Breutelia Indica, *Mitt.*
5831 Webera elongata, *Mitt.*
5832 —— polymorpha, *Schimp.*

5833 Webera rigescens, *Mitt.*
5834 —— Himalayana, *Mitt.*
5835 —— flexuosa, *Mitt.*
5836 —— delicatula, *Mitt.*
5837 —— cruda, *Schw.*
5838 —— reflexula, *Hpe.*
5839 —— flacca, *Mitt.*
5840 Bryum filiforme, *Mitt.*
5841 —— auratum, *Mitt.*
5842 —— nitidum, *Mitt.*
5843 —— Weissiae, *Mitt.*
5844 —— Harveyanum, *C. Muell.*
5845 —— argenteum, *L.*
5846 —— coronatum, *Schw.*
5847 —— hemisphæricarpum, *C. Muell.*
5848 —— rubens, *Mitt.*
5849 —— fulvellum, *Wils.*
5850 —— erythrinum, *Mitt.*
5851 —— nitens, *Hook.*
5852 —— alpinum, *L.*
5853 —— cernuum, *Br. and Schimp.*
5854 —— lacustre, *Brid.*
5855 —— cæspititium, *L.*
5856 —— cellulare, *Hook.*
5857 —— splachnoides, *Mitt.*
5858 —— flaccum, *Wills.*
5859 —— Nepalense, *Mitt.*
5860 —— paradoxum, *Schw.*
5861 —— recurvulum, *Mitt.*
5862 —— medianum, *Mitt.*
5863 —— giganteum, *Hook.*
5864 —— roseum, *Schreb.*
5865 —— ramosum, *Mitt.*
5866 —— laxelimbatum, *Hpe.*
5867 —— melanostegium, *C. Muell.*
5868 —— corrugatum, *Hpe.*
5869 Ryum pseudo-alpinum, *C. Muell.*
5870 —— ampullaceum, *C. Muell.*
5871 —— brachyacron, *C. Muell.*
5872 Hypnum læviusculum, *Mitt.*
5873 —— pterygonioides, *Mitt.*
5874 —— decorum, *Mitt.*
5875 —— fulvum, *Mitt.*
5876 —— incompletum, *Mitt.*
5877 —— Bonplandii, *Mitt.*
5878 —— longicuspidatum, *Mitt.*
5879 —— cuspidiferum, *Mitt.*
5880 —— Buchanani, *Hook.*
5881 —— cameratum, *Mitt.*
5882 —— procumbens, *Mitt.*
5883 —— Kamounense, *Harv.*
5884 —— plumosum, *Sw.*
5885 —— hians, *Hedw.*
5886 —— dumosum, *Mitt.*
5887 —— scabrisetum, *Schw.*
5888 —— rusciforme, *Wils.*
5889 —— vagans, *Harv.*
5890 —— semitortum, *Mitt.*
5891 —— planiusculum, *Mitt.*
5892 —— herbaceum, *Mitt.*
5893 —— sparsile, *Mitt.*
5894 —— Tavoyense, *Hook.*
5895 —— Wightii, *Mitt.*
5896 —— uncinatum, *Hedw.*
5897 —— orbiculatum, *Mitt.*
5898 —— pseudostriatum, *C. Muell.*
5899 —— cycnopelma. *C. Muell.*
5900 —— applanatum, *Hpe.*

5901 Hypnum corrugatulum, *C. Muell.*
5902 —— subalbicans, *Hpe.*
5903 —— euroblastum, *C. Muell.*
5904 —— xanthocladum, C. *Muell.*
5905 —— pycnothecium, *C. Muell.*
5906 —— ripicolum, *C. Muell.*
5907 —— submacrocarpum, *C. Muell.*
5908 —— stigmatophyllum, *C. Muell.*
5909 —— orbiculare, *Hpe.*
5910 —— Ballianum, *C. Muell.*
5911 —— semiblastum, *C. Muell.*
5912 —— intodontiphyllum, *C. Muell.*
5913 —— subtenax, *Hpe.*
5914 —— inæquirameum, *C. Muell.*
5915 —— amblyacron, *C.*
5916 —— spiculosum, *Hpe.*
5917 —— longedecurrens, *C. Muell.*
5918 —— mastigophorum, *C. Muell.*
5919 —— brachythecioides, *C. Muell.*
5920 Porotrichum Kurzianum, *Hpe.*
5921 Meteorium plicatum, *Mitt.*
5922 —— Wightii, *Mitt.*
5923 —— acuminatum, *Mitt.*
5924 —— Hookeri, *Mitt.*
5925 —— nitidum, *Mitt.*
5926 —— speciosum, *Mitt.*
5927 —— diverger., *Mitt.*
5928 Meteorium squarrosum, *Mitt.*
5929 —— phæum, *Mitt.*
5930 —— flammeum, *Mitt.*
5931 —— solutum, *Mitt.*
5932 —— cordatum, *Mitt.*
5933 —— membranaceum, *Mitt.*
5934 —— Wallichii, *Mitt.*
5935 —— Hookeri, *Mitt.*
5936 —— commutatum, *Mitt.*
5937 —— aureum, *Mitt.*
5938 —— spiculatum, *Mitt.*
5939 —— lanosum, *Mitt.*
5940 —— aureo-nitens, *Mitt.*
5941 —— filamentosum, *Mitt.*
5942 —— infuscatum, *Mitt.*
5943 Stereodon juliformis, *Mitt.*
5944 —— inflexus, *Mitt.*
5945 —— decolor, *Mitt.*
5946 —— pinetorum, *Mitt.*
5947 —— flavescens, *Mitt.*
5948 —— aureus, *Mitt.*
5949 —— capillaceus, *Mitt.*
5950 —— brevirostris, *Mitt.*
5951 —— russulus, *Mitt.*
5952 —— tenuirameus, *Mitt.*
5953 —— renitens, *Mitt.*
5954 —— speciosus, *Mitt.*
5955 —— extentus, *Mitt.*
5956 —— camurifolius, *Mitt.*
5957 —— crista-castrensis, *Mitt.*
5958 —— imponens, *Mitt.*
5959 —— perspicuus, *Mitt.*
5960 —— cupressiformis, *Brid.*
5961 —— propinguus, *Mitt.*
5962 —— curvirostris, *Mtit.*
5963 —— erythrocaulis, *Mitt.*
5964 —— amblyostegus, *Mitt.*
5965 —— nictans, *Mitt.*

5966 Stereodon lepidus, *Mitt*
5967 —— creperus, *Mitt.*
5968 —— celatus, *Mitt.*
5969 —— Fabronia, *Mitt.*
5970 —— ichnotocladus, *Mitt*
5971 —— compressifolius, *Mitt.*
5972 —— cyperoides, *Mitt.*
5973 —— rostellatus, *Mitt.*
5974 —— cygnicollus, *Mitt.*
5975 —— Nepalensis, *Mitt.*
5976 —— stissophyllus, *Mitt.*
5977 —— reticulatus, *Dos. and Molk.*
5978 —— succosus, *Mitt.*
3979 —— orthothecius, *Mitt.*
5980 —— tristículus, *Mitt.*
5981 —— confertissimus, *Mitt*
5982 —— Harveyanus, *Mitt.*
5983 —— humilis, *Mitt.*
5984 —— brachypelma, *C. Muell.*
5985 —— rostratus, *Mitt.*
5986 —— glauco-virens, *Mitt.*
5987 —— paleaceus, *Mitt.*
5988 —— neckeroideus, *Mitt.*
5989 —— Domianus, *Mitt.*
5990 —— denticulatus, *Brid.*
5991 —— nemoralis, *Mitt.*
5992 —— albescens, *Mitt.*
5993 —— Assamicus, *Mitt.*
5994 —— longitheca, *Mitt.*
5995 —— distichaceus, *Mitt.*
5996 —— taxirameus, *Mitt.*
5997 —— Ivoreanus, *Mitt.*
5998 —— præmollis, *Mitt.*
5999 —— acutirameus, *Mitt.*
6000 —— angustifolius, *Mitt.*
6001 —— plicatus, *Mitt.*
6002 —— lætus, *Mitt.*
6003 —— Gardneri, *Mitt.*
6004 Stereodon prorepens, *Mitt.*
6005 —— rubicundus, *Mitt.*
6006 —— caliginosus, *Mitt.*
6007 —— Schwaegricheni, *Mitt.*
6008 —— Griffithii, *Mitt.*
6009 —— curvatus, *Mitt.*
6010 —— luridus, *Mitt.*
6011 —— pulchellus, *Mitt.*
6012 —— comes, *Mitt.*
6013 —— fulvo-nitens, *Mitt.*
6014 —— nubigena, *Mitt.*
6015 —— Schreberi, *Mitt.*
6016 —— lancifolius, *Mitt.*
6017 —— erinaceus, *Mitt.*
6018 —— asper, *Mitt.*
6019 —— echinatus, *Mitt.*
6020 —— erraticus, *Mitt.*
6021 —— planulus, *Mitt.*
6022 —— orientalis, *Mitt.*
6023 —— surcularis, *Mitt.*
6024 —— lanytrichus, *Mitt.*
6025 —— penicillatus, *Mitt.*
6026 —— psilurus, *Mitt.*
6027 —— pilosulus, *Mitt.*
6028 —— Himalayanus, *Mitt.*
6029 —— macrocarpus, *Mitt.*
6030 —— pseudostriatus, *Mitt.*
6031 —— tenuis, *Mitt.*
6032 —— Hookeri, *Mitt.*
6033 —— micans, *Mitt.*
6034 —— serrula, *Mitt.*
6035 —— lychnites, *Mitt.*
6036 —— glaucocarpus, *Mitt.*
6037 Entodon pallidisetus, *Hampe.*
6038 Sauloma microcarpa, *Hf. and Wils.*
6039 Lepidopilum purpuratum, *Mitt.*
6040 —— secundum, *Mitt.*

6041 Lepidopilum flagellaceum, *C. Muell.*
6042 Hookeria acutifolia, *Hook.*
6043 Stereophyllum Indicum, *Mitt.*
6044 Neckera Hookerana, *Mitt.*
6045 —— rectiriblia, *Mitt.*
6046 —— dentata, *Griff.*
6047 —— glossophylla, *Mitt.*
6048 —— flexuosa, *Harv.*
6049 —— exserta, *Hook.*
6050 —— crinita, *Griff.*
6051 —— acutata, *Mitt*
6052 —— Himalayana, *Mitt.*
6053 —— fimbriata, *Harv.*
6054 —— fruticosa, *Mitt.*
6055 —— macrocarpa, *Brid.*
6056 —— subserrata, *Hook.*
6057 —— arcuans, *Mitt.*
6058 —— crenulata, *Harv.*
6059 —— alopecuroides, *Mitt.*
6060 —— ligulæfolia, *Mitt.*
6061 —— arbuscula, *Hpe.*
6062 —— longe-exserta, *Hpe.*
6063 —— subtenax, *C. Muell.*
6064 —— subbicolor, *Hpe.*
6065 —— apophysata, *Hpe.*
6066 —— himantophylla, *Hmpe.*
6067 —— craspedophylla, *Hpe.*
6068 Pilotrichum tumido-aureum, *C. Muell.*
6069 Hedwigia ciliata, *Ehrh.*
6070 Leucodon secundus, *Mitt.*
6071 Cryphæa sphærocarpa, *Mitt.*
6072 —— concavifolia, *Mitt.*
6073 Cleisostoma ambigua, *Mitt.*
6074 Anomodon viticulosus, *Hook*
6075 —— integerrimus, *Mitt.*
6076 Anomodon planatus, *Mitt.*
6077 —— tristis, *Cesati.*
6078 —— devolutus, *Mitt.*
6079 —— fuscinervis, *C. Muell.*
6080 Rhegmatodon declinatus, *Brod.*
6081 —— polycarpus, *Mitt.*
6082 —— orthostegius, *Mont.*
6083 Trachypus bicolor, *Schw.*
6084 —— blandus, *Mitt.*
6085 —— Harveyi, *Mitt.*
6086 —— fuscescens, *Mitt.*
6087 —— Buchanani, *Mitt.*
6088 —— declinatus, *Mitt.*
6089 —— crispatulus, *Mitt.*
6090 —— auriculatus, *Mitt.*
6091 Leskea capillata, *Mitt.*
6092 —— obscuriuscula, *Mitt.*
6093 —— subulacea, *Mitt.*
6094 —— stratosa, *Mitt.*
6095 —— prionophylla, *Mitt.*
6096 —— ramuligera, *Mitt.*
6097 —— Wallichii, *Mitt.*
6098 —— Hookeri, *Mitt.*
6099 —— cymbifolia, *Mitt.*
6100 —— trachypoda, *Mitt.*
6101 —— glaucina, *Mitt.*
6102 —— contortula, *Mitt.*
6103 —— minuscula, *Mitt.*
6104 —— sparsifolia, *Mitt.*
6105 —— remotifolia, *Hook.*
6106 —— haplohymenium, *Mitt.*
6107 Rozea pterogonioides, *C. Muell.*
6108 Calicostella papillata, *Mitt.*
6109 Rhacopilum orthocarpum *Mitt.*
6110 Conomitrium Bengalense, *Hpe.*

6111 Fissidens nobilis, *Griff.*
6112 —— acutifolius, *Mitt.*
6113 —— anomalus, *Mont.*
6114 —— cristatus, *Mitt.*
6115 —— taxifolius, *Hedw.*
6116 —— sylvaticus, *Griff.*
6117 —— areolatus, *Griff.*
6118 —— obscurus, *Mitt.*
6119 —— involutus, *Mitt.*
6120 —— jungermannioides, *Griff.*
6121 —— elongatus, *Mitt.*
6122 —— diversifolius, *Mitt.*
6123 —— pulchellus, *Mitt.*
6124 —— crenulatus, *Mitt.*
6125 —— Ceylonensis, *Doz. and Molk.*
6126 —— bryoides, *Hedw.*
6127 —— longisetus, *Griff.*
6128 —— Kurzii, *C. Muell.*
6129 —— subpalmatus, *C. Muell.*
6130 —— teraicola, *C. Muell.*
6131 —— Titalyanus, *C. Muell.*
6132 —— auriculatus, *C. Muell.*
6133 —— pallidulus, *Hpe.*
6134 —— corticula, *Hpe.*
6135 —— polysetulus, *C. Muell.*
6136 —— lancifolius, *Hpe.*
6137 —— cincinatus, *Hpe.*
6138 Rhizogonium spiniforme, *Br*
6139 Mnium crispum, *Mitt.*
6140 —— trichomitrium, *Mitt.*
6141 —— serratum, *Brid.*
6142 —— lycopodioides, *Hook.*
6143 —— heterophyllum, *Hook.*
6144 —— coriaceum, *Griff.*
6145 —— dilatatum, *Wils.*
6146 —— succulentum, *Mitt.*
6147 Mnium rhynchophorum, *Hook.*
6148 —— undulatum, *Hedw.*
6149 —— medium, *Bruch. and Schimp.*
6150 —— punctatum, *Hedw.*
6151 —— subcrispum, *C. Muell.*
6152 —— reflexifolium, *C. Muell.*
6153 —— reticulatum, *C. Muell.*
6154 —— tenerrimum, *C. Muell.*
6155 —— densirete, *Hpe.*
6156 Mniadelphus, obovatus, *Mitt.*
6157 —— heterophyllus, *Mitt.*
6158 —— Griffithii, *Mitt.*
6159 Daltonia apiculata, *Mitt.*
6160 —— marginata, *Griff.*
6161 —— flexifolia, *Mitt.*
6162 —— semitorta, *Mitt.*
6163 —— subapiculata, *Hampe.*
6164 Cyathophorum Adiantum, *Mitt.*
6165 —— Hookerianum, *Mitt.*
6166 Hypopterygium flavo-limbatum, *C. Muell.*
6167 Diphyscium longifolium, *Griff.*
6168 —— involutum, *Mitt.*
6169 Atrichum subserratum, *Mitt.*
6170 —— flavisetum, *Mitt.*
6171 Oligotrichum semilamellatum, *Mitt.*
6172 Pogonatum Himalayanum, *Mitt.*
6173 —— microstomum, *R. Br.*
6174 —— aloides, *Brid.*
6175 —— hexagonum, *Mitt.*
6176 —— patulum, *Harv.*

6177 Pogonatum proliferum, *Mitt.*
6178 —— flexicaule, *Mitt.*
6179 —— seminudum, *Mitt.*
6180 —— gymnophyllum, *Mitt.*
6181 —— rufisetum, *Mitt.*
6182 —— fuscatum, *Mitt.*
6183 —— fastigiatum, *Mitt.*
6184 Catharinea obtusula, *C. Muell.*
6185 Polytrichum perichætiale, *Mont.*
6186 —— tortipes, *Wils.*
6187 —— densifolium, *Wils.*
6188 —— xanthopilum, *Wils.*
6189 —— hirsutum, *Hpe.*
6190 —— integerrimum, *Hpe.*
6191 —— striatum, *Hpe.*
6192 Lyellia crispa, *Hook.*
6193 Sphagnum cymbifolium, *Dill.*
6194 —— pseudo-cymbifolium, *C. Muell.*
6195 —— cuspidatum, *Ehrh.*
6196 —— cuspidatulum, *C. Muell.*
6197 —— acutifolium, *Ehrh.*
6198 —— Gedeanum, *Doz. and Molk.*
6199 —— Junghuhnianum, *Doz. and Molk.*
6200 —— Khasianum, *Mitt.*
6201 —— fimbriatum, *Wils.*
6202 —— rufulum, *C. Muell.*
6203 —— Thomsoni, *C. Muell.*
6204 —— ovatum, *Hpe.*
6205 —— Hookeri, *C. Muell.*

HEPATICÆ.

6206 Jungermannia atrata, *Mitt.*
6207 Jungermannia concinnata, *Lightf.*
6208 —— rubida, *Mitt.*
6209 —— Hasskarliana, *NE.*
6210 —— appressifolia, *Mitt.*
6211 —— lanigera, *Mitt.*
6212 —— marcescens, *Mitt.*
6213 —— purpurata, *Mitt.*
6214 —— sanguinolenta, *Griff.*
6215 —— Assamica, *Griff.*
6216 —— polyrrhiza, *Hook.*
6217 —— Ariadne, *Tayl.*
6218 —— elongella, *Tayl.*
6219 —— pluridentata, *Mitt.*
6220 —— setosa, *Mitt.*
6221 —— piligera, *NE.*
6222 —— Doniana, *Hook.*
6223 —— exsecta, *Schm.*
6224 —— assimilis, *Mitt.*
6225 —— setigera, *Ldbg.*
6226 —— hirtella, *Weber.*
6227 —— setiformis, *Ehrh.*
6228 —— Orcadensis, *Hook.*
6229 —— ventricosa, *Dicks.*
6230 —— bicuspidata, *L.*
6231 —— connivens, *Dicks.*
6232 —— albula, *Mitt.*
6233 —— divaricata, *Eng. Bot.*
6234 Plagiochila Nepalensis, *Ldbg.*
6235 —— fruticosa, *Mitt.*
6236 —— flexuosa, *Mitt.*
6237 —— orientalis, *Tayl.*
6238 —— tenuis, *Ldbg.*
6239 —— denticulata, *Mitt.*
6240 —— sciophila, *NE.*
6241 —— Khasiana, *Mitt.*
6242 —— Wightii, *Ldbg.*
6243 —— firma, *Mitt.*
6244 —— trapezoidea, *Ldbg.*

6245 Plagiochila retusa, *Mitt.*
6246 —— ambigua, *Mitt.*
6247 —— integrifolia, *Mitt.*
6248 —— Brauniana, *NE.*
6249 —— fimbriata, *Mitt.*
6250 —— debilis, *Mitt.*
6251 —— deflexa, *Milt.*
6252 —— elegans, *Mitt.*
6253 —— uniformis, *Mitt.*
6254 —— subintegerrima, *NE.*
6255 —— secretifolia, *Mitt.*
6256 —— renitens, *Ldbg.*
6257 —— semidecurrens, *L. and L.*
6258 —— phalangea, *Tayl.*
6259 Leioscyphus Taylori, *Milt.*
6260 Lophocolea bidentata, *NE.*
6261 —— flaccida, *Mitt.*
6262 Chiloscyphtus argutus, *NE.*
6263 —— coalitus, *NE.*
6264 Sphagnœcetis communis, *NE.*
6265 Gymnanthe ciliata, *Mitt.*
6266 Isostachys Indica, *Mitt.*
6267 Scapania contorta, *Mitt.*
6268 —— planifolia, *NE.*
6269 —— ferruginea, *L. and L.*
6270 Ptilidium ciliare, *NE.*
6271 —— trichophyllum, *Mitt.*
6272 Sendtnera Woodsii; *Endl.*
6273 —— diclados, *Endl.*
6274 —— juniperina, *NE.*
6275 Trichocolea tomentella, *NE.*
6276 Lepidozia flexuosa, *Mitt.*
6277 —— ceratophylla, *Mitt.*
6278 —— setacea, *Mitt.*
6279 —— Wallichiana, *Gottsche.*
6280 —— reptans, *NE.*
6281 —— brevifolia, *Mitt*
6282 Mastigobryum echinatum, *Gottsche.*
6283 —— inæquilaterum, *L. and L.*
6284 —— Wallichianum, *NE.*
6285 —— umbricatum, *Mitt.*
6286 —— deflexum, *NE.*
6287 —— alternifolium, *NE.*
6288 —— præruptum, *NE.*
6289 —— tridens, *NE.*
6290 —— falcatum, *Ldbg.*
6291 —— appendiculatum, *Mitt.*
6292 —— Himalayanum, *Mitt.*
6293 —— oblongum, *Mitt.*
6294 Calypogeia marginella, *Mitt.*
6295 —— Trichomanis, *Corda.*
6296 —— æruginosa, *Mitt.*
6297 —— lunata, *Mitt.*
6298 Radula Javanica, *Gottsche.*
6299 —— obscura, *Mitt.*
6300 —— complanata, *Dum.*
6301 Madotheca acutifolia, *L. and L.*
6302 —— ligulifera, *Tayl.*
6303 —— campylophylla, *L. and L.*
6304 —— revoluta, *L. and L.*
6305 —— ptychantha, *Mitt.*
6306 —— plumosa, *Mitt.*
6307 Bryopteris Trinitensis, *L. and L.*
6308 Ptychanthus striatus, *N. E.*
6309 Lejeunia spathulistipa, *Mitt.*
6310 —— Wardiana, *Mitt.*
6311 —— repleta, *Mitt.*
6312 —— Lindenbergii. *Gotts he*

6313 Lejeunia subfusca, *N. E.*
6314 —— adplanata, *N. E.*
6315 —— turgida, *N. E.*
6316 —— semirepanda, *N. E.*
6317 —— infuscata, *Mitt.*
6318 —— saccata, *Mitt.*
6319 —— Wightii, *Ldbg.*
6320 —— Wallichiana, *Lehm.*
6321 —— firma, *Mitt.*
6322 —— obscura, *Mitt.*
6323 —— subacuta, *Mitt.*
6324 —— appendiculata, *Mitt.*
6325 —— aligera, *Mitt.*
6326 —— lævinscula, *Mitt*
6327 —— flexuosa, *Mitt.*
6328 —— Nilgiriana, *Gottsche.*
6329 —— Khasiana, *Mitt.*
6330 —— angustifolia, *Mitt.*
6331 —— venusta, *Lacost.*
6332 —— subopaca, *Mitt.*
6333 —— pulla, *Mitt.*
6334 —— producta, *Mitt.*
6335 —— longifolia, *Mitt.*
6336 —— diversifolia, *Mitt.*
6337 Frullania Wallichiana, *Mitt.*
6338 —— squarrosa, *N. E.*
6339 —— ericoides, *N. E.*
6340 —— æolotis, *N. E.*
6341 —— asperula, *Mitt.*
6342 —— inflexa, *Mitt.*
6343 —— breviuscula, *Mitt.*
6344 —— rugosa, *Mitt.*
6345 —— physantha, *Mitt.*
6346 —— Nepalensis, *L. and L.*
6347 —— apiculata, *R. N. and B.*
6348 —— neurota, *Tayl.*
6349 —— Hutchinsiæ, *N. E.*
6350 —— moniliata, *N. E.*
6351 —— evoluta, *Mitt.*
6352 Calycularia crispula, *Mitt*
6353 Steetzia ambigua, *Mitt.*
6354 Pellia epiphylla, *N. E.*
6355 Metgeria furcata, *N. E.*
6356 Sarcomitrium multifidum, *Mitt.*
6357 —— pingue, *Mitt.*
6358 Synhymenium aureo-nitens, *Griff.*
6359 Targionia Michelii, *Corda.*
6360 Plagiochasma cordatum, *L. and L.*
6361 —— appendiculatum, *L. and L.*
6362 —— Colsmannianum, *L. and Gottsche.*
6363 —— paradoxum, *Griff.*
6364 —— pedicellatum, *Griff.*
6365 Marchantia polymorpha, *L.*
6366 —— nitida, *L. and L.*
6367 —— Nepalensis, *L. and L.*
6368 —— linearis, *L. and L.*
6369 —— Assamica, *Griff.*
6370 —— subintegra, *Mitt.*
6371 Dumortiera hirsuta, *N. E.*
6372 —— denudata, *Mitt.*
6373 —— Nepalensis, *N. E.*
6374 Fegatella conica, *Corda.*
6375 Grimaldia dichotoma, *Radd.*
6376 —— barbifrons, *Bosch.*
6377 Fimbriaria Nepalensis, *Tayl.*
6378 —— elegans, *Spreng.*
6379 —— Wallichiana, *L. and L.*
6380 —— Khasiana, *Mitt.*
6381 —— viridis, *L. and L.*
6382 —— leptophylla, *Mont*
6383 Reboulia hemisphærica, *Radd.*

6384 Monosolenium tenerum, *Griff.*
6385 Anthoceros glandulosus, *L. and L.*
6386 —— punctatus, *L.*
6387 Riccia discolor, *L. and L.*
6388 —— cristallina, *L.*
6389 —— ciliata, *Hoffm.*
6390 —— fluitans, *L.*

LICHENES.

6391 Leptogium Menziesii, *Mont.*
6392 Pyrgidium Bengalense, *Nyl.*
6393 Acroscyphus sphæroph oroides, *Lév.*
6394 Bæomyces pachypus, *Nyl.*
6395 —— icmadophyllus, *L.*
6396 Cladonia fimbriata, *Hoffm.*
6397 —— degenerans, *Flk.*
6398 —— turgida, *Hoffm.*
6399 —— furcata, *Hoffm.*
6400 —— deformis, *Hoffm.*
6401 —— digitata, *Hoffm.*
6402 —— rangiformis, *Hoffm.*
6403 —— gracilis, *Hook.*
6404 —— aggregata, *Eschw.*
6405 —— notata, *Krplh.*
6406 —— trachyna, *Ach.*
6407 —— rangiferina, *L.*
6408 Stereocaulon ramulosum, *Sw.*
6409 —— nesæum, *Nyl*
6410 —— strictum, *Nyl.*
6411 —— coralloides, *Fr.*
6412 —— paschale, *Ach.*
6413 —— tomentosum, *Fr.*
6414 —— myriocarpoides, *Nyl.*
6415 —— arbuscula, *Nyl.*
6416 Siphula ceratites, *Fr.*
6417 Thamnolia vermicularis, *Ach.*
6418 Usnea barbata, *Fr.*
6419 —— longissima, *Ach.*
6420 —— lacunosa, *Willd.*
6421 —— Vrieseana, *Mont. and Bosch.*
6422 —— trichoidea, *Ach.*
6423 —— ceratina, *Ach.*
6424 Chlorea flexuosa, *Nyl.*
6425 —— cladonioides, *Nyl.*
6426 Alectoria sulcata, *Lév.*
6427 —— bicolor, *Nyl.*
6428 —— jubata, *Ach.*
6429 —— sulcata, *Nyl.*
6430 —— ochroleuca, *Nyl.*
6431 —— virens, *Tayl.*
6432 —— divaricata, *Ach.*
6433 Ramalina calicaris, .
6434 —— complanata, *Ach.*
6435 —— farinacea, *L.*
6436 —— angulosa, *Laur.*
6437 Cetraria Islandica, *Ach.*
6438 —— Stracheyi, *Bab.*
6439 —— reticulata, *Krplh.*
6440 Platysma melalomum, *Nyl.*
6441 —— Stracheyi, *Nyl.*
6442 —— leucostigmeum, *Nyl.*
6443 —— Fahlunense, *Nyl.*
6444 —— everniellum, *Nyl.*
6445 —— ambiguum, *Nyl.*
6446 —— glaucum, *Nyl.*
6447 Peltigera malacea, *Fr.*
6448 —— canina, *Hoffm.*
6449 —— rufescens, *Hoffm.*
6450 —— platydactyla, *Hoffm.*
6451 Solorina crocea, *Ach.*
6452 —— Simensis, *Hochst.*
6453 Sticta retigera, *Ach.*

6454 Sticta pulmonacea, *Ach.*
6455 Parmelia hypotrypa, *Nyl.*
6456 —— Kamtschadalis, *Ach*
6457 —— perlata, *Ach.*
6458 —— perforata, *Ach.*
6459 —— olivetorum, *Ach.*
6460 —— latissima, *Fée.*
6461 —— tiliacea, *Ach.*
6462 —— lævigata, *Ach.*
6463 —— saxatilis, *Ach.*
6464 —— caperata, *Ach.*
6465 —— Borreri, *Turn.*
6466 —— olivacea, *Ach.*
6467 —— physodes, *Ach.*
6468 —— pertusa, *Schaer.*
6469 —— firmula, *Nyl.*
6470 Physcia speciosa, *Fr.*
6471 —— leucomela, *L.*
6472 —— picta, *Sw.*
6473 Pyxine Cocoës, *Ach.*
6474 —— Meissnerii, *Tuckerm.*
6475 Lecanora Domingensis, *Agh.*
6476 —— leprolyta, *Nyl.*
6477 —— polyotera, *Nyl.*
6478 —— aurantiaca, *Lightf.*
6479 —— Encephalarti, *Krplh.*
6480 —— intrusa, *Nyl.*
6481 —— colobina, *Ach,*
6482 —— subfusca, *Ach.*
6483 —— sarcopis, *Whlbg.*
6484 —— granifera, *Ach.*
6485 Pertusaria communis, *Dc.*
6486 —— leioplaca, *Nyl.*
6487 Thelostrema microspora, *Mont.*
6488 Gyrostomum scyphuliferum, *Ach.*
6489 Lecidea carneo-lutea, *Turn.*
6490 Lecidea medialis, *Tuckerm.*
6491 —— propinquella, *Nyl.*
6492 —— spadicea, *Tuckerm.*
6493 —— patellarioides, *Nyl.*
6494 —— triphragmia, *Nyl.*
6495 —— premnea, *Ach.*
6496 —— lutea, *Dicks.*
6497 —— luteola, *Nyl.*
6498 —— æqualis, *Nyl.*
6499 —— diorista, *Nyl.*
6500 —— albo-atra, *Nyl.*
6501 —— plurilocularis, *Nyl.*
6502 Opegrapha herpetica, *Ach.*
6503 —— subvulgata, *Nyl.*
6504 —— Bonplandiæ, *Fée.*
6505 —— Martii, *Nyl.*
6506 —— varia, *Ach.*
6507 —— vulgata, *Ach.*
6508 —— inæqualis, *Fée.*
6509 Platygrapha palidella, *Nyl.*
6510 —— glaucomoides, *Nyl.*
6511 —— stigmatica, *Krplh.*
6512 Stigmatidium micrographum, *Nyl.*
6513 —— melastigma, *Nyl.*
6514 Arthonia cinnabarina.
6515 —— subvelata, *Nyl.*
6516 —— subgyrosa, *Nyl.*
6517 —— chiodectoides, *Nyl.*
6518 —— Antillarum, *Fée.*
6519 —— impolitella, *Nyl.*
6520 —— abnormis, *Ach.*
6521 —— circumalbicans, *Nyl.*
6522 —— astroidea, *Nyl.*
6523 Chiodecton heterotropum, *Nyl.*
6524 Graphis scripta, *Ach.*
6525 —— obtecta, *Nyl.*
6526 Fissurina leuconephela, *Nyl.*

6527 Glyphis cicatricosa, *Ach.*
6528 Verrucaria nitida, *Schrad.*
6529 —— libricola, *Fée.*
6530 —— tropica, *Ach.*
6531 —— diluta, *Fée.*
6532 —— mastoidella, *Nyl.*
6533 —— albo-atra, *Krplh.*
6534 —— majuscula, *Nyl.*
6535 Thelopsis inordinata, *Nyl.*
6536 Melanotheca Indica, *Nyl.*
6537 Trypethelium Sprengelii, *Ach.*
6538 —— madreporiforme, *Eschw.*
6539 —— subdiscretum, *Nyl.*
6540 —— pallescens, *Fée.*
6541 —— leucotrypum, *Nyl.*
6542 Strigula complanata, *Fée.*
6543 Lepraria flava, *Ach.*

FUNGI.

6544 Agaricus regalis, *Berk.*
6545 —— eriophorus, *Berk.*
6546 —— Berkeleyi, *Hf.*
6547 —— excoriatus, *Fr.*
6548 —— deliciolum, *Berk.*
6549 —— horrens, *Berk.*
6550 —— varus, *Berk.*
6551 —— decipellus, *Berk.*
6552 —— duplicatus, *Berk.*
6553 —— multicolorus, *Berk.*
6554 —— omnituens, *Berk.*
6555 —— adelphus, *Berk.*
6556 —— cremoriceps, *Berk.*
6557 —— incongruus, *Berk.*
6558 —— napipes, *Hf.*
6559 —— raphanipes, *Berk.*
6560 —— stillaticius, *Berk.*
6561 —— undabundus, *Berk.*
6562 —— triplicatus, *Hf.*
6563 Agaricus papaveraceus, *Berk.*
6564 —— podagrosus, *Berk.*
6565 —— velutipes, *Curt.*
6566 —— ustipes, *Berk.*
6567 —— rhodellus, *Berk.*
6568 —— antitypus, *Berk.*
6569 —— camptopus, *Berk.*
6570 —— Broomeianus, *Berk.*
6571 —— myriadeus, *Berk.*
6572 —— nubigenus, *Berk.*
6573 —— aratus, *Berk.*
6574 —— bicrenatus, *Hf.*
6575 —— rubiætinctus, *Berk.*
6576 —— xanthophyllus, *Berk.*
6577 —— russulinus, *Berk.*
6578 —— rufatus, *Berk.*
6579 —— manipularis, *Berk.*
6580 —— prasius, *Berk.*
6581 —— rufopictus, *Berk.*
6582 —— apalosclerus, *Berk.*
6583 —— verrucarius, *Berk.*
6584 —— anserinus, *Berk.*
6585 —— eous, *Berk.*
6586 —— ninguidus, *Berk.*
6587 —— palumbinus, *Berk.*
6588 —— chrysoprasius, *Berk.*
6589 —— Goliathus, *Hf.*
6590 —— cystopus, *Berk.*
6591 —— Thwaitesii, *Hf.*
6592 —— examinans, *Berk.*
6593 —— microsporus, *Berk.*
6594 —— aurivellus, *Batsch.*
6595 —— chrysimyces, *Berk.*
6596 —— scrupeus, *Berk.*
6597 —— tener, *Schaeff.*
6598 —— exaltatus, *Berk.*
6599 —— sylvaticus, *Schaeff.*
6600 —— aureo-fulvus, *Berk.*
6601 —— sublateritius, *Fries*

6602 Agaricus fascicularis, *Huds.*
6603 —— macrophalus, *Berk.*
6604 —— velutinus, *Pers.*
6605 —— hemisoodes, *Berk.*
6606 —— atrichus, *Berk.*
6607 —— castanophyllus, *Berk.*
6608 —— condensus, *Berk.*
6609 —— cæspititius, *Berk.*
6610 —— nassa, *Berk.*
6611 —— flavo-griseus, *Berk.*
6612 —— petaloides, *Bull.*
6613 —— Khasiensis, *Berk.*
6614 —— fulviceps, *Berkl.*
6615 —— stramineus, *Berk.*
6616 —— calvescens, *Berk.*
6617 —— discolor, *Berk.*
6618 —— silvaticus, *Fr.*
6619 —— campestris, *L.*
6620 —— cæsareus, *Scop.*
6621 —— vaginatus, *Bull.*
6622 —— fritillarius, *Berk.*
6623 —— anax, *Berk.*
6624 —— implanus, *Berk.*
6625 —— laccatus, *Scop.*
6626 —— maculatus, *Alb. and Sch.*
6627 —— velutipes, *Curt.*
6628 —— blandulus, *Berk.*
6629 —— dryophilus, *Bull.*
6630 —— macer, *Berk.*
6631 —— purus, *Pers.*
6632 —— galericulatus. *Scop.*
6633 —— colligatus, *Berk.*
6634 —— discordis, *Berk.*
6635 —— incommiscibilis, *Berk.*
6636 —— dentosus, *Berk.*
6637 —— puberulus, *Berk.*
6638 —— flavo-miniatus, *Berk.*
6639 —— epipterygius, *Scop.*
6640 Agaricus macrothelus, *Berk*
6641 —— umbelliferus, *L.*
6642 —— ranunculinus, *Berk.*
6643 —— radiatilis, *Berk.*
6644 —— placentodes, *Berk.*
6645 —— cuspidatus, *Berk.*
6646 —— euthelus, *Berk.*
6647 —— lazulinus, *Fr.*
6648 —— phlegmaticus, *Berk.*
6649 —— flavidus, *Schaeff.*
6650 —— micromegas, *Berk.*
6651 —— descendens, *Berk.*
6652 —— vinolentus, *Berkl.*
6653 —— latipes, *Berk.*
6654 —— semiglobatus, *Batch.*
6655 —— papilionaceus, *Bull.*
6656 —— montanus, *Berkl.*
6657 —— longipes, *Bull.*
6658 —— salignus, *Pers.*
6659 Cortinarius Emodensis, *Berk.*
6660 —— vinosus, *Berk.*
6661 —— violaceus, *Fries.*
6662 —— flammeus, *Berk.*
6663 —— saniosus, *Fr.*
6664 Hygrophorus miniatus, *Fr.*
6665 —— Pomona, *Berk.*
6666 —— fulvus, *Berk.*
6667 Lactarius vellereus, *Fr.*
6668 —— deliciosus, *Fr.*
6669 —— princeps, *Berk.*
6670 —— inquinans, *Berk.*
6671 —— subdulcis, *Fr.*
6672 —— stramineus, *Berk.*
6673 —— Nepalensis, *Berk.*
6674 —— Lecomtei, *Fr.*
6675 Coprinus comatus, *Fr.*
6676 —— Hookeri, *Berk.*
6677 —— vellereus, *Berk.*
6678 Pascillus chrysites, *Berk*

6679 Pascillus sulfureus, *Berk.*
6680 —— pinguis, *Hf.*
6681 Russula sanguinea, *Fr.*
6682 —— emetica, *Fr.*
6683 —— furcata, *Fr.*
6684 —— grossa, *Berk.*
6685 —— cinnabarina, *Hf.*
6686 —— lepida, *Fr.*
6687 Cantharellus infundibuliformis, *Fr.*
6688 Marasmius iridescens, *Berk.*
6689 —— erythropus, *Fr.*
6690 —— caperatus, *Berk.*
6691 —— hæmatodes, *Berk.*
6692 —— Hookeri, *Berk.*
6693 —— rotula, *Fr.*
6694 Lentinus Lecomtei, *Fr.*
6695 —— Hookerianus, *Berk.*
6696 —— coadunatus, *Hf.*
6697 —— hepaticus, *Berk.*
6698 —— subdulcis, *Berk.*
6699 —— glabratus, *Mont.*
6700 Panus monticola, *Berk.*
6701 —— conchatus, *Fr.*
6702 Schizophyllum commune, *Fr.*
6703 Xerotus cantharelloides, *Berk.*
6704 —— lobatus, *Berk.*
6705 Lenzites repanda, *Fr.*
6706 —— subferruginea, *Berk.*
6707 —— Palisoti, *Fr.*
6708 —— acuta, *Berk.*
6709 —— imbricata, *Fr.*
6710 —— betulina, *Fr.*
6711 —— pallida, *Berk.*
6712 —— rugulosa, *Berk.*
6713 —— applanata, *Fr.*
6714 —— ochrophylla, *Berk.*
6715 Lenzites eximia, *Berk and Curt.*
6716 Boletus Emodensis, *Berk.*
6717 —— ustalis, *Berk.*
6718 —— delphinus, *Hf.*
6719 —— furfuraceus, *Berk.*
6720 —— squamatus, *Berk.*
6721 —— fragicolor, *Berk.*
6722 —— gigas, *Berk.*
6723 —— areolatus, *Berk.*
6724 —— scrobiculatus, *Berk.*
6725 —— flavipes, *Berk.*
6726 —— pusillus, *Berk.*
6727 —— verrucarius, *Berk.*
6728 Strobilomyces polypyramis, *Hf.*
6729 —— montosus, *Berk.*
6730 —— nigricans, *Berk.*
6731 Polyporus cremoricolor, *Berk.*
6732 —— umbilicatus, *Berk.*
6733 —— rufescens, *Fr.*
6734 —— oblectans, *Berk.*
6735 —— xanthopus, *Fr.*
6736 —— maculatus, *Berk.*
6737 —— squamosus, *Fries.*
6738 —— platyporus, *Berk.*
6739 —— sanguineus, *Fr.*
6740 —— flabelliformis, *Klotsch.*
6741 —— rubricus, *Berk.*
6742 —— intybaceus, *Fr.*
6743 —— sulfureus, *Fr.*
6744 —— crispus, *Fr.*
6745 —— ozonioides, *Berk.*
6746 —— iridioides, *Berk*
6747 —— licnoides, *Mont.*
6748 —— zonalis, *Berk.*
6749 —— hirsutus, *Fr.*
6750 —— versicolor, *Fr.*
6751 —— Nilghiriensis, *Mont.*

6752 Polyporus elongatus, *Berk.*
6753 —— funalis, *Fr.*
6754 —— hypoplastus, *Berk.*
6755 —— picipes, *Fr.*
6756 —— lucidus, *Fr.*
6757 —— cinnabarinus, *Fr.*
6758 —— simulans, *Berk. and Curr.*
6759 —— nodipes, *Berk.*
6760 —— tabulæformis, *Berk.*
6761 —— obtectans, *Berk.*
6762 —— rugosus, *NE.*
6763 —— xanthopus, *Fr.*
6764 —— floridens, *Berk.*
6765 —— versiformis, *Berk.*
6766 —— pudens, *Berk.*
6767 —— vallatus, *Berk.*
6768 —— squamæformis, *Berk.*
6769 —— flammans, *Berk.*
6770 —— adustus, *Fr.*
6771 —— digitalis, *Berk.*
6772 —— vivax, *Berk.*
6773 —— Elatinus, *Berk.*
6774 —— medullaris, *Berk.*
6775 —— australis, *Fr.*
6776 —— fomentarius, *L.*
6777 —— adamantinus, *Berk.*
6778 —— igniarius, *Fr.*
6779 —— senex, *Ne. and Mont.*
6780 —— endophæus, *Berk.*
6781 —— marginatus, *Fr.*
6782 —— scoparius, *Berk.*
6783 —— semitostus, *Berk.*
6784 —— scruposus, *Fr.*
6785 —— xeranticus, *Berk.*
6786 —— flavidus, *Berk.*
6787 —— caperatus, *Berk.*
6788 —— pictilis, *Berk.*
6789 —— Nepalensis, *Berk.*
6790 —— corium, *Perk.*
6791 Polyporus gratus, *Berk.*
6792 —— cereus, *Berk.*
6793 —— Beharensis, *Berk.*
6794 —— Campbelli, *Berk.*
6795 Trametes lobata, *Berk.*
6796 —— Hookeri, *Berk.*
6797 —— crenulata, *Berk.*
6798 —— cingulata, *Berk.*
6799 —— colliculosa, *Berk.*
6800 —— tephroleuca, *Berk.*
6801 —— occidentalis, *Fr.*
6802 —— immutata, *Berk.*
6803 —— ozonioides, *Berk.*
6804 Dædalea sanguinea, *Klotsch.*
6805 —— tenuis, *Berk.*
6806 —— Emodensis, *Berk.*
6807 Cyclomyces turbinatus, *Berk.*
6808 Hexagonia Wightii, *Klotsch.*
6809 —— polygramma, *Mont.*
6810 —— tenuis, *Fr.*
6811 —— nitida, *DR. and M.*
6812 Favolus multiplex, *Lev.*
6813 —— tenerrimus, *Berk.*
6814 —— intestinalis, *Berk.*
6815 —— setiporus, *Berk.*
6816 Merulius lignosus, *Berk.*
6817 Laschia subvelutina, *Berk.*
6818 —— lamellosa, *Berk.*
6819 —— tremellosa, *Fries.*
6820 Fistulina hepatica, *Fr.*
6821 Hydnum coralloides, *Scop.*
6822 —— gilvum, *Berk.*
6823 —— flabelliforme, *Berk.*
6824 —— auriscalpium, *L.*
6825 —— zonatum, *Batsch.*
6826 —— vespertilio, *Berk.*
6827 —— erinaceus, *Bull.*

6828 Hydnum flabelliforme, *Berk.*
6829 Hydnoglœum Kurzii, *Curr.*
6830 Lachnocladium Hookerii, *Berk.*
6831 Irpex zonatus, *Berk.*
6832 —— flavus, *Klotsch.*
6833 Radulum spongiosum, *Berk.*
6834 Thelephora palmata, *Fr.*
6835 —— dentrica, *Pers.*
6836 Clavaria botrytis, *Pers.*
6837 —— formosa, *Pers.*
6838 —— stricta, *Pers.*
6839 —— miltina, *Berk.*
6840 Phlebia reflexa, *Berk.*
6841 Stereum rimosum, *Berk.*
6842 —— purpureum, *Fr.*
6843 —— hirsutum, *Fr.*
6844 —— spadiceum, *Fr.*
6845 —— bicolor, *Fr.*
6846 —— Mougeotii, *Fr.*
6847 —— ostrea, *Fr.*
6848 —— elegans. *Fr.*
6849 —— endocrocinum, *Berk.*
6850 —— lobatum, *Fr.*
6851 —— cacao, *Berk.*
6852 —— scytale, *Berk.*
6853 Corticium Læve, *Fr.*
6854 Calocera sphærobasis, *Berk.*
6855 Tremella ferruginea, *Sm.*
6856 —— foliacea, *Fr.*
6857 —— protensa, *Berk.*
6858 Dictyophora speciosa, *Klotsch.*
6859 —— phalloidea, *Lev.*
6860 Clathrus cancellatus, *L.*
6861 Simblum sp.
6862 Exida hispidula, *Berk.*
6863 —— protracta, *Lev.*
6864 —— bursæformis, *Berk.*
6865 Geaster hygrometricus, *P.*
6866 —— limbatus, *Fr.*
6867 Bovista sp.
6868 Lycoperdon ocelatum, *Fr.*
6869 —— sericellum, *Berk.*
6870 —— gemmatum, *Fr.*
6871 —— pyriforme, *Schaeff.*
6872 —— microspermum, *Berk.*
6873 —— pusillum, *Batsch.*
6874 —— elongatum, *Berk.*
6875 —— fucatum, *Lev.*
6676 —— delicatum, *Berk.*
6877 —— Emodense, *Berk.*
6878 —— xanthospermum, *Berk.*
6879 Trichocoma paradoxum, *Jungh.*
6880 Scheroderma Geaster, *Fr.*
6881 —— Bovita, *Fr.*
6882 —— nitidum, *Berk.*
6883 Mitremyces Junghuhnii, *Schlecht and Mull.*
6884 —— viridis, *Berk.*
6885 Diderma contextum, *Pers.*
6886 Arcyria punicea, *Pers.*
6887 Lycogala epidendrum, *Fr.*
6888 Reticularia entoxantha, *Berk.*
6889 Cyathus Hookeri, *Berk.*
6890 —— Emodensis, *Berk.*
6891 —— intermedius, *Mont.*
6892 Aschersonia oxystoma, *Berk.*
6893 Uredo Clematidis, *Berk.*
6894 Coleosporium pingue, *Lev.*
6895 Ravenelia Indica, *Berk.*
6896 Ustilago carbo, *Tul.*

6897 Ustilago Emodensis, *Berk.*
6898 —— bursa, *Berk.*
6899 —— vittata, *Berk.*
6900 —— endotricha, *Berk.*
6901 —— ocrearum, *Berk.*
6902 Aecidium Thomsoni, *Berk.*
6903 Puccinia ustalis, *Berk.*
6904 —— insidiosa, *Berk.*
6905 Stilbum lateritium, *Berk.*
6906 Typhula fuscipes, *Fr.*
6907 Cladosporium scopæforme, *Berk.*
6908 Sclerographium aterrimum, *Berk.*
6909 Geoglossum viride, *Pers.*
6910 —— glabrum, *Pers.*
6911 Rhizina zonata, *Berk.*
6912 Leotia lubrica, *Pers.*
6913 Guepinia sp.
6914 Peziza Darjeelensis, *Berk.*
6915 —— macrotis, *Berk.*
6916 —— aurantia, *Pers.*
6917 —— geneospora, *Berk.*
6918 —— clandestina, *Bull.*
6919 —— frustigena, *Bull.*
6920 —— turbinella, *Berk.*
6921 —— stilboidea, *Berk.*
6922 —— citrina, *Pers.*
6923 —— lutescens, *Fr.*
6924 —— æruginea, *Berk.*
6925 Bulgaria inquinans, *Fr.*
6926 Phytisma piceum, *Berk.*
6927 Phacidium ceuthocarpa, *F*
6928 Asterina aspersa, *Berk.*
6929 —— cincta, *Berk.*
6930 —— scutellifera, *Berk.*
6931 Cordyceps falcata, *Berk.*
6932 —— racemosa, *Berk.*
6933 Xylaria Hypoxylon, *Ehrh.*
6934 —— piperiformis *Berk.*
6935 —— fistuca, *Berk.*
6936 —— tabacina, *Kickx.*
6937 —— compuncta, *Jungh.*
6938 —— digitata *L.*
6939 —— polymorpha, *Pers.*
6940 —— suborbiculare, *Welw. and Curr.*
6941 —— crenulatum, *Berk.*
6942 —— concentricum, *Bolt.*
6943 —— vermicosum, *Schwein.*
6944 —— multiforme, *Fr.*
6945 —— perforatum, *Schwein.*
6946 Hypocrea semiamplexa, *Berk.*
6947 —— floccosa, *Fr.*
6948 —— peltata, *Berk.*
6949 —— grossa, *Berk.*
6950 Dothidea vorax, *Berk and Curt.*
6951 Hypopteris apiospora, *Mont.*
6952 ——Bambusæ, *Lév.*
6953 Sphæria Cayennensis, *Fr*
6954 —— constellatio, *Berk.*
6955 —— Nepalensis, *Berk.*
6956 —— Yuccæ gloriosæ, *Schwein.*
6957 Graphiola Phœnicis, *Poit.*
6958 Corynelia uberiformis, *Fr.*
6959 Meliola sp.
6960 Peronospora arborescens, *Berk.* (causing the poppy disease in India.)
6961 Eurotium herbariorum, *Lk.*
6962 Choanephora Cunninghamiana, *Currey.*

ALGÆ.

6963 Gloecapsa rupestris, *Mart.*
6964 Microcystis æruginosa, *Kg.*
6965 —— olivacea, *Kg.*
6966 Leptothrix ochracea, *Kg.*
6967 —— subtilissima, *Kg.*
6968 —— muralis, *Kg.*
6969 —— mamillosa, *Menegh.*
6970 Hypheothrix investiens, *Mart.*
6971 —— subundulata, *Mart.*
6972 —— tenax, *Mart.*
6973 Spirulina oscillarioides, *Turp*
6974 Oscillaria interrupta, *Mart.*
6975 —— Froelichii, *Kg.*
6976 —— tenuis, *Lyngb.*
6977 —— Juliana, *Men.*
6978 —— versicolor, *Mart.*
6979 —— subfusca, *Vauch.*
6980 —— Grateloupii, *Bory.*
6981 —— Kurziana, *Mart.*
6982 —— tenerrima, *Kg.*
6983 —— amphibia, *Ag.*
6984 —— brevis, *Kg.*
6985 —— Cortiana, *Men.*
6986 —— antliaria, *Mart.*
6987 —— limosa, *Ag.*
6988 Phormidium oryzetorum, *Mart.*
6989 —— Lyngbyaceum, *Kg.*
6990 Chthonoblastus salinus, *Kg.*
0991 Lyngbya crispa, *Ag.*
6992 —— cincinnata, *Kg.*
6993 —— cinerascens, *Kg.*
6994 —— solitaris, *Kg.*
6995 —— majuscula, *Harv.*
6996 Leibleinia Juliana, *Kg.*
6997 Hydrocoleum Kurzii, *Mart.*
6998 —— heterotrichum, *Kg.*
6999 —— violaceum, *Mart.*
7000 —— Lenormandi, *Mart.*
7001 Nostoc gregarium, *Thur.*
7002 Hormosiphon coriaceus, *Kg.*
7003 Anabæna mollis, *Kg.*
7004 Cylindrospermum spirale, *Kg.*
7005 Rivularia Lens, *Menegh.*
7006 Mastigonema granulatum, *Mart.*
7007 —— cæspitosum, *Kg.*
7008 Scytonema aureum, *Men.*
7009 —— granulatum, *Mart.*
7010 —— ærugineo-cinereum, *Kg.*
7011 —— tomentosum, *Kg.*
7012 —— cinereum, *Men.*
7013 —— palmarum, *Mart.*
7014 —— chlorophæum, *Kg.*
7015 —— Vieillardia, *Mart.*
7016 Dictyonema fuscescens, *Mart.*
7017 Fischera tenuis *Mart.*
7018 Hormoceras flaccidum, *Kg.*
7019 Palmellia bullosa, *Kg.*
7020 Protococcus cohærens, *Kg.*
7021 —— vulgaris, *Kg.*
7022 Pediastrum Rotula, *Ehrb.*
7023 Volvox sp.
7024 Closterium sp.
7025 Cosmarium sp.
7026 Spirogyra adnata, *Lk.*
7027 —— nitida, *Lk.*
7028 —— elongata, *Kg.*
7029 —— Heeriana, *Nac.*

7030 Spirogyra subaequa, *Kg.*
7031 —— decimina, *Lk.*
7032 Zygnema insigne, *Kg.*
7033 Zygogonium Bengalense, *Mart.*
7034 Sirogonium sticticum, *Kg.*
7035 Mougeotia affinis, *Kg.*
7036 Staurospermum cœrulescens, *Kg.*
7037 Palmoglœa Kurziana, *Mart.*
7038 Vaucheria sp.
7039 Enteromorpha intestinalis, *L.*
7040 Glœtila protogenita, *Kg.*
7041 —— concatenata, *Kg.*
7042 Allogonium depressum, *Mart.*
7043 Conferva bombycina, *Ag.*
7044 —— antillarum, *Kg.*
7045 Chætomorpha chlorotica, *Kg.*
7046 Rhizoclonium antillarum, *Kg.*
7047 —— Kochianum, *Kg.*
7048 Cladophora Tranquebariensis, *Roth.*
7049 —— Bengalensis, *Mart.*
7050 —— Roettleri, *Kg.*
7051 —— simpliciuscula, *Kg.*
7052 Œdogonium scutatum, *Kg.*
7053 Ulothrix crassa, *Kg.*
7054 —— pectinalis, *Kg.*
7055 Chroolepus villosum, *Kg.*
7056 Chætophora Indica, *Mart.*
7057 —— radians, *Kg.*
7058 Caloglossa Leprieurii, *Harv.*
7059 Bostrychia rivularis, *Harv.*
7060 Catenella Opuntia, *Grev.*
7061 Campsopagon Hookeri, *Mont.*
7062 Polysiphonia rufo-lanosa, *Harv.*
7063 —— angustissima, *Kg.*
7064 —— polychroma, *Mart.*
7065 Hypoglossum Bengalense, *Mart.*
7066 —— Leprieurii, *Kg.*
7067 —— pygmæum, *Mart.*
7068 Encœlium vesicatum *Kg.*

DIATOMACEÆ.

7069 Cyclotella striata, *Grun.*
7070 Coscinodiscus subtilis, *Ehrb.*
7071 —— radicatus, *Ehrb.*
7072 —— lineatus, *Ehrb.*
7073 Achnanthes subsessilis, *Kg.*
7074 Synedra Ulna, *Ehrb.*
7075 Nitzschia Kurziana, *Rabenh.*
7076 —— dissipata, *Kg.*
7077 —— obtusa, *Sm.*
7078 —— Sigmatella, *Greg.*
7079 Navicula velox, *Kg.*
7080 —— cryptocephala, *Kg.*
7081 —— Calcuttensis, *Grun*
7082 —— Fenzlii, *Grun.*
7083 —— sphærophora, *Kg.*
7084 Pleurosigma Sinense, *Pritch.*
7085 —— Hippocampus, *Sm.*
7086 —— Kurzianum, *Grun.*